THE TIMES Higher Education

Long-term training policy Director sought to oversee urged for 16-19 group

by Frances Gibb

A comprehensive long-term pro-gramme of education and truliding for the 16 to 19 age group lins beca called for by the Socialist Educa-tional Association.

In a resolution submitted for the In a resolution submitted for the Labour Porty confarence in Octo-ber, the association says it is alarmed by the lack of progress in the elimination of class, race or sex discrimination in post-school cduca-tion and training.

It welcomes the quick huplemen-tation of the Holland report, but odds that this was a result of shortterm plan.

A wide-ranging programme for this ago group should include: a totol review of the financial pro-vision; provision of educotion, praining work and careers guid-ance; every local authority should are a plan and make such are prepare o plun ond make suck pro-vision for 16 to 198 and tulks with both sides of industry to help in the programme.

The association also calls on the The association are calls on the Government to insist that colleges, universities and local authorities take immediate action to help the disadvantaged; for instance, by clauging admissions criteria to take account of the social and educa-tional background of poplements

hos prevented them qualifying at

and would do so "when the situa

Music at University College,

Phillp Abrams reviews four new books on the media.

BA president's address The THES readership survey.

Cardiff.

NEXT WEEK

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between age groups, giving help to those who hare not made use af existing education facibiles. Those undertaking retraining should have greater support intrough the Mat-power Services Commission, it soys. Funds should also be provided for a the National Advisory Council on adult education. is A shird resolution, from West

now drawn on the final agenda from the list of submitted motions, which is to be published of the cud of September. Higher education is not expected to be included.

On the original list, however, there were motions on varians higher education issues suck os taition fees and the bluery line.

The Liberal Party composite motion on education is also actually on schools, although its contains a peneral statement deploying educa-tion cuts. It says also that the current surplus of teachers should be used to improve the overall teacher-papil ratio.

tional background of applicants. A system of paid charational leare as a right for working people is colled for in a resolution tabled by Penrith and the Border Consti-tuency Labour Party. theory Lebour Party. It also calls on the Government to adhist the grant/fee support system to ensure greater equality

teaching company scheme by Clive Cooksan

This statement seems a little This stiticinicit secens a little tion to permit special funds to be diverted for the education, training and re-training of post-school groups. Both the Conservotives and Libe-trol parties are expected to com-ferences. The Conservatives have how dearm in the first and educational institu-tions and educational institutions---two universities and two polytechnics---involred.

The decision to advertise the post --salary negotiable but not loss. than £12,000 a year-contirms that the SRC nucl Dol ore pressing adread with plans to set up a small scheme. This was still under dis-the subset when a few avandian plan. ussion when a Com expansion plan

TUC calls for training boost

The Trades Union Congress has ments of trade union studies but asked the Government for funds to help to establish a pational trade union educational centre and to furance a "significant expression in residential fuedities" on trade union connection on trade the neutrino on the activities. residential facilities" on trado ucion courses according to the TUC annual report, which is to be presented to congress next month. By the early 1980s, it says, about

Assuming an anomal turnover of 20 per cent, the current figure, this will uncon that 120,000 new representatives o year will need training. About 500 oddditionol full-time tunces will be required. At present there are about 100. TUC policy is to soud members on courses organized by fucthor education ond advanced further education colleges, the Workers' Educational Association and sume university extra-mural departments.

university extra-murol departments. "set it would like to establish depart- text".

movation in manufactoring in-

for the scheme over the next five years was numerical in May. The target is to have 20 teaching compaties in operation by 1982.

so well placed to expand their training programmes os the TUC believes, says the report. Developments in Industrial democracy are creating new acods in trade minu education.

Representatives from different plants within a company need to be brought together and some com-pany policies will require concess involving copresentatives from several unions, fn view of this, "there meets to be significant ex-pansion in residential facilities available to unions",

Last year's grant went on the payment of running day release hodios providing day release courses, an teaching materials, enurse durclopment of the TUC cal-lege, infor fraining and on union residential courses of at least four days days,

For this year the Generol Chum-cil asked the Government if it would also holp to hay up to hulf the cost of union courses providing a nonimum of -15 hours study hours, but the request mas turned

A big trive to find new osli-rollency of minucation deced relose, is demanded by ine bai-union of Students in in terms in the admention livers Papers submitted to Mrs Williams, the submitted to Mrs Williams, the

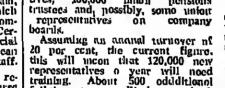
the schools where rolls of a should It suys the colleges should be olupted to cope with the ge expansion of in-service tra-mentioned in the Green Paper, with the many oducoice mean ing schemes for uncoupled in 19-year-olds. Euro-spaceman

Malta students Row threatens inexamexodus poly course

London boroughs und the North East Laudea Polytechnic aver o

Assuming an anonal turnover nf

By the carly 1980s, it says, about 180,000 rule initialists a year will be going an education courses con-nected with union work. The Government will be asked for reversi million pannels a year to help pay for them. For this year's 40,00 Organing places the TUC asked for £1,115,000. It received £550,000, Last year's grant from public finds was £400,000. The expansion in educational provision sought by the TUC comes from its forecast that by the early 1960s there will be 600,000 netive union representa-tives at nity one time. These will isolate 300,000 shop steward and white collar representatives, up to 200,000 union safety representa-tives, 100,000 milon pensions trustees and, possibly, some union representatives on company boards. Maltese unodical students are having to take their final exoninotions in Britala because the bitter and long-running dispute between the Muha Government and the islamits doctors her meanwith their and the Muha



The horoughs of Neurham, London on September 26. Sir John Croom, chairman of the Scottish Council for Postgradume Medical Education, who was appointed su external examiner by the Royal University of Maira, was not allowed to conduct oral ond clinical examinations at the St Luke's traching hospital this sum-mer. Fight students hare alread-

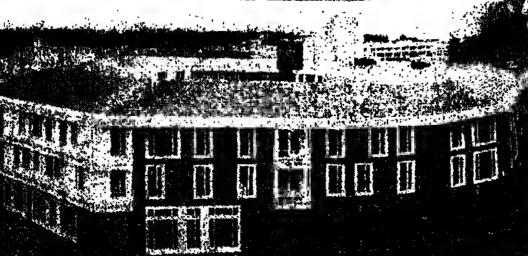
actived in London and the rest with be flying in within the next three weeks. A BMA spokesman said the students secured "mails confused" and did not know what they were do next.

and did nor know what they were contrayed or recruiting chucannin -gning to do next. Dr Vincent Moran, Maltese Hendh (Criming. Menager and the Government was not "manager stadomes, firther the British " outons commendated , as But wanted to inke the blairost degree, nor he math and would not onelly. Students who have been accepted Students who have been accopted for the two-year course have been informed by NELP that there is a disagreement and that no final deci-sions will be made until Septembac 9, when the joint education commit-tee meets. At this late stage stu-dents would find it difficult to get alternative courses.

se degreo

alternative courses. Social wor kstaff have the sup-poit of the Central Council for Education and Training in Social Work which has insisted that if a student was rejacted—in accordance with its agreed procedures they cannot be coerced either by the polytachnic authorities or the main-main baroughs. It is understood

C TIMES NEWSIYAPENIS LIVITED, 1977 Printed and Politiked by Transe Newschipers Limited at New Printing House Remers, Limited at New Printing House Remers, Limited at New Printing House Remers, Limited Anguet 26, 1977, Hentsburd as in sorth operation of the Post Office. Beromd rises usslage bald at New York, N.Y. Price Rec. polytachnic authorities or the man-taining boroughs. It is understood CCESSW officials would assist the NELP students find places on other courses. This E1.3m social studies building at Warwick University, initially delayed because of the spending cuts has now been completed. Social science departments will be housed in fi-



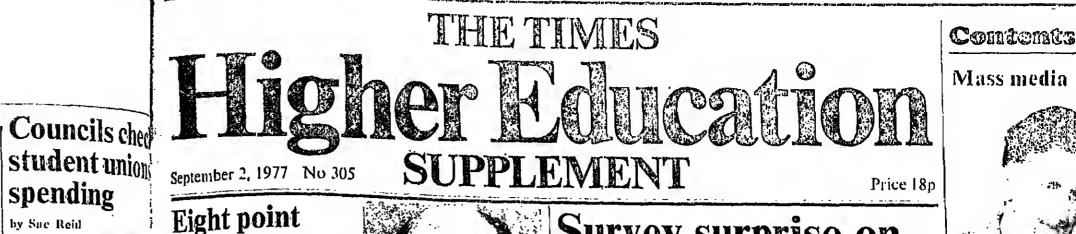
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the European Space Agency, which will receive similar lists from the ther 11 member countries. The THES

phical strong in this and last week's issues of The THUS. These ing and composing rooms,



student union

The seven minimized so fur are based on a purple slip between a university at polyteolatic and an individual firm. Young engineers the supervision of industrial and academic staff, helping to make major dominized and academic staff, helping to make the supervision of industrial and academic staff, helping to make major dominized and academic of the second staff. A committee of the sadai Education Officers has dedi-the move, reported in tabia tion of Estucation, becaused

academic surf, neighig to make imajor waanufucturing changes in the firm. "Ite role of the director, os the SRC sees it, will be " to drive fur-ward the entire scheme by plausing its development, atimularing suit-uble proposals and monitoring the proverse of accurated arranging the the of the second secon and proposals and monitoring me progress of approved programmes". The person appointed will need a professional engineering back-ground and "a record of success-ful technological and managerial capitation fees to colone.

spending

by Suc Reid

The cumminee, comedan cation officers la polyter, tuining anthorities, sanita the luck of effective on a the level of fees denanish the level of fees denance of minors. It has calle don deb, mem of Education and Stan the local authority oscilla-take inimicalistic action.

Mr Peter Sloman, elaz utligger of the Association of Re-

The advisory team, appoint monitor and ench speaked public sector higher counter, said empiration fees we as priority for investigation.

spokesman this week rejuind a there were already onwing ing fee increases. A misrow reject applications made by 15% and this often hupping



militan Authorities, said and "We have long been world? these fees. It is a classic or of irresponsibility."

But a National Union of Stole

colleges-NUS

callan Seccotary, nox atth The NUS believes that the set shim if teacher supply has an truted the much on the set the schuuls where rolls are the

investigation of changing **DES** role hy Peter Hennessy

In Peter Hennessy A committee of senior Civil Sur-vants has begue a thoronglygoing review of the changing rol cof the Repartment of Education and Sci-ance, its relationship with Minis-ters, the cest of Whitehall and the local unthorities in a period of economic nusterity and public con-cern about education provision. An eight-point agenda has been drswa up for the guidance of n Civil Service tram who will pruvide the basis of the review. They have been instructed to produce o pre-liminary survey by the end of Norember.

The framework requires thom to investiganc: the objectives and functions of the department; its top organization and management; aperational manugoment on a week by week basis; financial courrol; by weck basis; financial control; manpower control; relations with local authorities, government de-partments and other organizations; its relationship with Ministurs; and its relationship with Ministurs; Mr James Hamilton, permanon serritary to the department and chaitman of the steering commit-tee overseeing the work of the re-view team, described the avorelso this wes kas: "A re-exonutination of the top manugement structure in

the top manugement structure in face of rapid and extensive conca-tion change in the form of finan-clat constraints, a decreasing school position and a much greater pub-ic swareness af problems. The review, one of a scries affect-ing all Whitchall departments, Samuel a constraints,

as all Whitchall departments, assumes a continuation of the exist-ing all Whitchall departments, assumes a continuation of the exist-ing machinery of government. But it could well continuent on mean of shored or infurred responsibility like the troining of young people in which both the DES and the Manpower Services Cumulssion play a part. The whola area of 16 to be of primary concero.

omes Ifamilton

whether the work of the 450 inspectors should be examined nlongslde that of the 2,400 Civil Servants in the donmitment.

Mr liamition, who conducted his own adniature review on becombig pertument secretary last year and reurganized the divisions, which a particular strengthening on the plauning side, wonts the present excretse to consider criticisms of the DES made by the Organization for Economic Conperation and Development in 1975 and by a subcommittee of the Commons Expen-diture Committee in 1976. Both upbraided the depactment for exces-sive secrecy and inadequate future

Mr Homilton has invited Miss Janet Fookes, Consorrouve MP for Plymouth, Drake, who chaired the Commons committee, to submit e poper to the review team.

In common with other ministries the department intends to they the Prime Minister's recent injunction to greater openness by publishing factual information from internal policy rovie ws.

policy rovie ws. Thu review team will also examine the possibility of breaking tradi-thand divisional boundaries by establishing nil hoc teams to curry put special projects. Plannelal can-trul will also he high no the list of priorities. The department has a forecast indget of 17.394m for the current finencial year. There is a feeling too atnong senior officials thatane side effect of shrinking rosources for educa-tion, ofter so many years of is.

to be of primary concerce, to be of primary concerce, it has yot to be decided whether the schools inspectorata should be tackled within this exercise. The series the steering committee

Survey surprise on lecturers' attitudes to pay

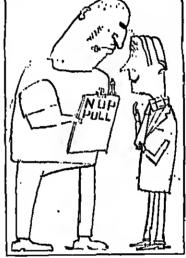
by Frances Gibb

Two out of three ocademics think their escoings foir in the present economic cliquete, occording to a National Opinion Polls THES reodecship survey published this week. It shows that af a sample of university, polytechnic ond col-lege of education and further edu-cation lecturers, 66 per cent consider their survey combiner for cation lecturers, 66 per cent consider their current comings fair.

But there is a marked division of opluion between universities ond polytechnics. Under half of uni-versity lecturers, 44 per cent, think their earnings foir compared with 69 per cent of polytechnic lecturers. In colleges of education the pro-portion is 65 per cent, while in colleges of further education it is 76 per cent. 76 per cent,

A similar proportion is revealed the proportions thinking their

Serry Fanlon



"Suddenly 1 find my lecturer's solary more than adequate."

are positively unfai carnings are positively unfain. Unuiversity lecturers are top with 50 per cent claiming earnings infair compared with 25 per cent in polytechnics, 30 per cent in colleges of education and 20 per cent in further education. The survey also shows that of those chaining their earnings are unfair 71 per cent do not know why. Daily 28 per cent think they oro the low-49 per cent in polytechnics.

The survey was coodacted on a basis of interviews with 506 I turers in England and Woles there's in Englaid and Woles in both further and higher education between Murch and July this year and July this year and with 293 in Scotland. Among its dans were to establish who the resders of The THES are; who their views are; what they reod; who they think sboat educational journals in gen-eral and The Times supplements in particular. particular,

It shows also that those con-tented with their enrnings and those discomented ors roughly equally divided between scalor and janior interviews Alun Ho interviews Alun Ho science lecturers, followed by science lecturers, feel bordest done by, with 38 per cent and 35 per cent respectively thinking gearnings for compared with 26 per cent of orts lecturers and 23 per cent of orts lecturers and 23 per cent of social sclentists.

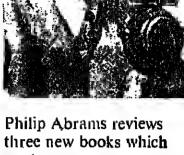
social sclentists. The propursion of senior to junior staff in further and higher educa-tion is 29 per cent to 71 per cent. Almost as mony teach non-degree work, 47 per cent, as degree work, 53 per cent, and 29 per cent have postgraduate degrees and S4 per cent degrees. Du major educational issues, they are conservativo on organiza-ion and progressivo on content. Ovor helf, 59 per cent, favour e hierorchy of institutions with differ-ent functions as opposed to 28 per cent favouring comprehensive insti-tutions with fairly uniform stan-dords.

Survey report page

paedophile group

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analyse mass communications, 12

Planning ahead

In the last of six articles Gerry Fowler argues for more effective planning of higher education, 11

Music maestro

Mike Duckenfield interviews Alun Hoddinott, composer and professor of music at University

Heath Lees, Denis McCaldin and Kenneth Mobbs review new music books, 13

Brazil's troubles

Fay Haussman reports on the waves of student protests after a 10-year Jull, 9

Terence Miller, director of North London Polytechnic, replies to Peter Scott's article on Marxism in higher

On the Other Hand sends

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BA president warns of new battle against prejudice

classes, suid Cir Andrew-grand, son of Thonnas Huxlay who was suchan effective lighter for Dor-winismin the 1860s. The one big difference betwean the two debates is that Dorwin bad morshalled on ovarwhelming body of evidence over tha 20 years before The Origin of Spetter was published to 1859. A debate to evolution to 1839, say, might tava led to avolution being dis-credited sod to the formation of a climate of ophicion similar to what inheritone of obility: "Anyooo wbo takes the meter seriousy is to condermina morality and to in-such mis fellow human belags." "There is one featura of tha "There is one featura of tha "There is one featura of tha

OU union wants

Inversities have provided three of five British conditions in a control of the British conditions in the first European in space by were camed this week by the permeet of Industry : Dr Mickeel and rescore the Multard Space Science is Southenopton University Officient is space in the forces of basile or and increasing to the more share to the Multard Space Science in the issue this time is the industry is space in the Space in the issue this time is the industry is before the Multard Space Science of Lawseel, said Cir Andrew weak is before the Multard Space Science in the issue this time is the industry is before the Multard Space Science in the issue this time is the industry is before the Multard Space Science in the issue this time is the industry is before the Multard Space Science in the issue this time is the induction is before the Multard Space Science in the Space in the induce of the Multard Space Science in the issue this time is the induced is space in the origination of the Multard Space Science in the issue this time is the induced is space the Space in the Space in the origination of the Multard Space Science is the induced is space the Space in the space

THE TIMES INCHER EDUCATION SUPPLEMENT U ACADEMIC DEVELOPMENTS

Thematic approach to French goes forward

by David Walker

Next term students in French at Munchester University begin the second year of the department's re-

gones such as the novel of droma. The course now divides into "theores" such as irony, the courde, the literature of the town. The teaching metod will be by small groups of students working with staff outside the formality of the lecture hall. lecture hall.

While the literatura of France will remain at the core of the degree, the department has broadeacd the range of options. In the second and third years thye con combine with literary and linguistic medicval studies, cuntemporny French language, the history of french art and political thunght end isstitutions.

The furmula adopted by the three professors la the department, F. E. Sutchiffe (classical French litera-

Social studies

hits headlines

It is not often that a new pulytech-

Science Research Council's survey research unit. The third mud fourth years require choosing between specializing in social work with a view to obtain-ing the Certificate af Qualification in Social Work, or in social research. The latter is intended to prepare atudents for careers in social admi-mistration. clanning ud research

nistration, planning ad rescarch. Preference for tha course will ba given to those with at least a year's work experience.

core), William Rathwell (French language and medieral French literature), and G_{1} F. A. Gadaffre incrature), and G. F. G. (a) (modern Freach Disenture) is as follows. "In the study of Freuch second year of the and designed and modernized symme-Staff report the first year a surcess fur their replacement of the tradi-tional language syllabus with a par-tern of study combining linguistic skill and knowledge o fihe culture and society of modern Prance. The key to the Manchester re-forms is the abolition of traditional more into historical periods or into historical periods or into historical periods or into historical periods or into historical the dominant into

it was decided to retain a basic first rear. All would be given a know-ledge of the historical development of French from the Middle Ages together with a grounding in the techniques of modern linguistics. This involves o strong emphasis out everyday French. The perman-ent staif of the department lins eight malve speakers and five French ussistants are employed. The French press will be studied and new audio-visual techniques

combination with other disciplines ombination with other disciplines just other foreign languages. This year it may be combined with Italian, Russian or Linguistics, all honours courses.

The Exmouth

connexion

by Judith Judil



Performance arts-dunce, drama and music-seent to be the sub-jects most fashionablu for new degree courses at present. This Octuber thero will be a new BA course in theatre arts at the Rose Ilruford Cullege of Speech ond Dranau, and next October u BA at Ulruninghunt University in dunce, oframa and mosts.

The emphasis of the Rose limitord The emphasis of the Rose limitord course will be performance, either in miditional thuatro or in more experimental canditions. Students will be expected to develup their performing ability to a professional form

They will undertake a graded acting programme, and study cuch level ing programme, and study cuch level uf it from the point of view of history and style, to understand original performance conditions and the aesthetic theories behind

Othor topics will be the proh-lems of presenting classical repor-tuire in modern conditions, and the study of pursonal and sucial ha-linviour.

Birmingham centre takes up the Byzantine cause

It is not often that a new polytech-hic degree cause gots mentioned in Lobour Weekly, but the staff run-aing the BA in applied social studies at the Polytechnic of North London managed it, presumably on the grounds, as the prospectus says, that the degree "seeka to relate knowledge of the social sciences to the problems of taking effective action in the community." The Council for National Acade-inde Awards racontly approved tho fauryear course to start in Septem-ber. It is held to be specially attrac-tiva to mature atudents not having tho usual entry qualifications. The first twoyeurs givo a ground-in addition. This is a series of send-ars, workshop and projects in thu-field making uso of staff experise in stotistical techniques. Mr Juhn lial, one of the degree's creaturs, is a bealing light of the quontite ive methods group of sociologists ond worked formerly with the Sochi Science Research council's survey. The third md fourth years require medium-sixed towns. The course aims to look at urhan soclety through many disciplines. Its purpose is in integrato disciplines through concentration on a cummon theme. Students will he uhle to study econnaics, gen-graphy, history, pullites and sociology. The course will centre un Britain hut will also include studies of other parts of the world. The degree is expected to could The post-graduate Centru for there. Among the university posses Byzantho Studies at Birminghom sions is the Whitting Collection of University new replaces the Cont-mittee for Byzantho Studies, which adapted collections in Western existed for 13 years, built np n library oud other resources, started a dagree cuurse, und organized study tubrs, Inter-facidity courses and

visited the centre emfler this year for its spring symposium, on the Byzanihe Empire and Caliphate and the Crusader Intervention in the period 632-1258. Tupics dis-cussed included commerce, urban life, militury matters, estrutiony, Byzontha and Islamic palaces and ceremony, and the Latio heritage in the Levant. tuprs, Inter-factily courses and international symposia. The centre, whoso full-time direc-tor is Dr Anthony Bryer, will con-tinuo tho committee's work of pro-viding teaching in what is essenti-ally an interdisciplinary field with lecturers from eight different departments. At present there ore 17 postgreduate students.

departments. At present there are 17 postgraduate students. In a sense, the centre's inougura-tion merely formalized un existing sluation, Byzantine studies was already well established at the uni-versity; the British Bulletin of Busening Studies is added there Bozantine Studies is edited there. Committee has been encouraging, and the journal Bozantine and hut so far the necessary muney has Modern Greek Studies was founded, not been provided.

dance, music, drama, etc...

At Birminghum, the course is similarly both practical and then-reited, and will prepare students for research into the art forms of opera, music, drama, for teaching in schools and colleges of further adaction, or for professional work on the stage. on the stage.

Professor fvor Keys, of the music department and Mr Jucelyn Powell, department ond Mr Jucelyn Powell, of the drama department, urgue that there is a newl for such a course because research has shown students with these three interests are usually forced to specialize in only one. In the case of duare, they have ht the past had to take a practical course below degree level.

Academics from many commites visited the centre emilier this year

The navel BA degree is pro-ance arts mounted at Midica Pulytechnic enters its sead he shortly. Stuff are hoping its as term will prove the course as pr students' imaginations in the ar-tray us the first, expensed sessions out "the nature of perior inter". Mr David PUeacock, seals kit inter in numic at the polyadit

Air David PDeacock, said hi tuver in nursic at the polyadit reports that students repose a aspects of the course was add unpredictable. "One characial quickly emorged ", he say, "it have managed to altrat said whuse with direstly a basi ground, experience and investithe performance arts and have ethnic roots, has influenced by response to the tasks adentia and heen reflected in the pair and othere of the work adding Students are encouraged and with the pulytechnic's at the and succepter. Working soft the resident dance compared upera society contributes to 176

Learning language of overseas marketing

Language graduates will seen alile to top up their degrees with some practical qualification in overse marketing.

From October, the Polytechnic s. Central London will offer a pos graduate diplomo in this subject, 9 provido hanguoge graduates with some specialized knowledge which nill serve as a relevant basis for

 cnssed included commerce, urban
 life, millitury matters, estrationity,
 Byzontina und Islamic palaces and
 ceremony, and the Lutlo horitage
 in the Levant.
 More onabitious plans for the
 centre ure at present in cuild
 storage, however, hernuso of shout uge of funds. It is huped eventual
 ally to establish mure permaneun
 posts and to increase the number of students. The University Grants
 Committee has been encouraging. a career.

The course is provided to the of the polytechnic's restriction management, modern language and niau agriuent, modern language sacial sciences and busines inde-it ha four main aims there is no dividen tudents when he two languages; the principles uf marking manage principles uf marking manage inquit; widen their knowledge of meut; widen their knowledge of meut; widen their knowledge of

The languages offered are French, German and Spanish. Next year the

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The watermark of success

STUDY AT HOME for a London University Externs DEGREE Wolkey Hall, the only conveniendence college with full courses for London University External RA depress, provides individual instruction by highly qualified

Wolkey Itali has a tensarkable record of success - a page rele of over 90% is anchered its some degree subjects. Including a high proportion of the first and upper 2nd citas honours evenies (1) and Courtes cover B.A. in One Subject, B.So., All. t and tit, B.Sc. Boon, L.S.B. B.D., London University Diploma and Postgradonie Ourt, in Education, College range of Processional, career and G.C.Li. subjects.

subjects. Free prospectus from the Principal W M M Milligan AIRE, TD, MA, Depi IBA I, Wolcey Hall, Oxford OX2 6FIR, Therefore (1955) Telephone (0865) 54231 (Ansafane after 4.45, p.a.)

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Nolsey Hall Oxford Astrodied CAUC Member ABCC Founded 1574

women's studies

nerce.

A diploma in women's studies is being offered by the Polytechnic of F Central London this month. The later-disciplinary course will be run out purrtime besis of one evening a week over two years.

Students wil likke five short com-ses rouging from "Women io the Family" and the "History and Political Character of the Women's Movement" to "Differing Theoreti-cal Accouoty of Women's Position 'in Society", attend five atudy weak-tends, and submit a project in their final term. The course is being run by the college's cultural and community studies unit, part of the School of Communication. Numbers will be

The degree is expected to oquin students to work in administration, planning, the sacial services or com-

limited to 26 and tha course fee is £16. Further details are obtainable from the Registry, School of Com-munication, FCL, 18-22 Riding House Street, Loadon, W1 (Tol. 01-436) 5811).

States and the second

The courso hos four units in each of three years with the assessment o feach unit in turn. There are four exemination papers at the end of the degree which is awarded by the University of Exetur, Entrance requirements are four GCE passees, two of which must he at A level. PCL diploma in Committee has been encouraging,

" Every single one of our grade

"Every alugia one of our graduates is abla to get a very good jub." This schene course at the University Manchester Institute of Science and Bowden, he principal. UMIST runs the only university degree course in paper making in the University for over 2D stu-dents, the Overse loake is only 12. Tronically, the paper industry a materials, fibre ower 2D stu-facing a serious shortfall in 'recruit-The course has a framowork of mathematics physics and chomistry raw materials, fibre one is also devoted to the industry."

WEA claims grant share-out unfair

State of job market makes graduates reluctant to leave

by Fronces Gibb

A reduction of nearly 20 per cent in the number of arts and social science graduates leaving Dundee University last year is reported in the 1975-76 minuted report of the university's careers and appoint-ments service.

ments service. The fall reflected o drop in the oumber of graduates generolly, from 485 in 1975 to 431 last yeur. The number of scienco, law, medicine and dentistry graduates also fell, olthaugh the number in engineering increased.

also fell, olthaugh the number in engineering increased. One reason, according to the report, could be the increased difficulty of obtaining jobs. One response to a difficult job market could be that graduates were more fikely to stay on and attempt an honours degree.

cher training in the same numbers

us ulways. At Stirling, however, the num-

At Siirling, however, the num-ber entering from arts and sociol sciences dropped from 75 to 41. Tre report notes an increusa in the number of groduoles going on th full-time study, mostly due to those embarking on courses for legal axantinations (10 in 1975) ond other specialized training (15 in 1976 compared with aix in 1975), Specialized training includes por-sontel management, careers alylic-ory work, husiness studies. ory work, husiness studies, neconntancy, town plauning oud Ilbrarlauship.

or the individual to guint sume self-confidence to enter the world of the individual to guint sume self-confidence to enter the world of the individual to guint sume self-confidence to enter the world of the individual to guint sume self-confidence to enter the world of the individual to guint sume self-confidence to enter the world of the individual to guint sume self-confidence to enter the world of training which no or she know some-ing olout in edvance, but it also hos the merit of helang a short-torm training which cun be entered and left before die job morket hos delerforated too much." In spite af predictiona thot 1976 would ha one of tho worst years aver for greduata unemployment, Dundeo itad only 4 per cent still aeeking joba at the end of the year compored with 7 per cent the year of graduotes' destination, the revel de stat graduates were more fikely to stay on aud attempt an Another runson might he the publicity given to job difficulties during 107273, which could have affacted the intoko that year. There was n kolt also hu the fail in previous ycors of thoso song on to further education, training which cau be enter the world of equal number of graduatos decided io go on to further education, training which cau be entered and equal rescarch and visiting to do so were abla to gain studentships for facted in the voir of close suitably usified and wisiting to do so were abla to gain studentships for factores and other tubyes degrees, specially in science. The level of the report says. It there the voir in the voir soys that arts ond accial is spore firm 91 in 1975, to 56 acd contines cancer many in account-it. So per cent of the output. This shies, especially in art where stiles, especially in art where stiles and matcher univer-stiles and to opt for tea.

Tourism students find a world of opportunity

Despite high uneuployment, three

pleted it successfully. Of the 41 Brilish students, 25

per cent went into jobs with officiat

11 31

Open University art and environment course students playing "chose the dragon's tail " at their summer school which ended last week at Sussex University. They are led by Marcelle Weed, an American recreator and summer school organizer, who says games should be played with love. The dragon same is an exercise in social contact.

Polytechnics 'damaged' by local authorities

 by Surah Segrue
 by polytechnic fecturers bused at Portsonault Polytechnic, sets out its case against horal government with feeling. Local authorities do not have the expensive to run the polytechnics, it suys, and their efforts are hungling and orbitrory. Councils have control of pulytech-nics without proper responsibility for their education work. The palytechnics are in danger of becoming second-rute higher chaco-tion provided on the cheap. The APT lists o number of widely held "failacles" aloud local anthority involvement in the poly-technics. First, ratepayers provide oaly a small part of their cost, most of it is met from national tuxation. And polytechnic netwitles have had to be carried out under a cloak of decention to pass the complex bureoucrucy linking colleges and the local education committee. "It is on associated fallacy that the control of local autharity higher education is part of the democratic

education is part of the democratic duty of authoritics and is within their ability", the APT says: "Actually the local authority's role is os an agem for the odvanced fur-

Workshop for unemployed

A workshop to help unemployed graduates improve their job prospeets is being held at the Polytechnic of Central London this week.

For two doys, 28 graduates from universides and polytechnics all over the country will get practical and mora guidance from experienced careers tatora.

Ms Anna Ewins, the organizer of the conference and a careers tutor nt PCL, said : "We were very worrled shout mamployment this year and knew from our own stu-donts how many had been moking applications and not getting any-witera."

She said the workshop was nined

where." She said the workshop was nimed at three particular groups : those who had "burled their heads in the sond" and not looked for jobs until they had groduoted ; thoae who ofter trying for ano kind of job had ta rethink and look for something more realistically, and thosa who needed aelp with the practical details such as filling in forms and interview technique. The workshop was advertised in the job vacancy llats aant to all universities and yolptechnics. Tho number of replies was about doublo that needed Ms Ewins said. Ono third of the students are from PCL, with the rest coming from places such as Durham and the Midlands; Students, are equally inlead be-the interview technique. On the first day, the workshop

On the first day, the workshop will concentrate on coupselling will concentrate on counselling students; encouraging them to look at paat axperiences, where they are now, and what the future holds. of being in control of their slruation, and give them a positive approach", Ms Ewine said.

The secand day will provida, with the aid of videotapes, tha practical details of job hunting: filling in forma; letters of applica-tion: the selection process, and filling in forma; letters of applica-tion; the aelection process; and interviewa. "Many people think-that graduates ought to know all this", Ms Ewins asid. "But although they may be educated in an academic cognitive way, when it comea to practical knowladge, they are as naive as the school leaver."

She added, however, that althaugh unemployment among graduates was estimated to be about 9 per

ther education pool on the one hand and of the Department of Education on the other. The suppliant role of the local authoritles over the reorganization of teacher training orgues against any major function even in this field. The election of bacal councillors will be recally hudependent at the efficient function-ing of higher education in their nrea.

The machinery for courses in the pulytechnics has bruken down, the APT says. Polytechnics are penalized by oldfashioned staffing arrangements in-adequate for cullege reclinical and library staff.

The anonymous author of the APT's statement strikes a personal note when he discusses the inability note when he discusses the inability of local authorities' finnace depart-ments to comprehend some of the hems of expenditure by a good polytechnic teacher. "The ploce-ment of students in industry has required the availability of funds for trarelling, subsistence and enter-tainment. The word' entertoinment' used here will have elicited a con-ditioued reflex from unost lucal authority representatives. Meanorles of standing for hours in trains, separated by class of compartment from industrially based and gener-olly junlor travelling companions, en route to visit sandwich students, will have eroused bitter reflection will have aroused bltter reflectiona from lecturers."

The APT recontinends against control of the polytechnics by new regional authorities. Even bigger councils would ensure less account-ability onal responsibility.

First look at leisure services

A working group sat up by Middle-sax Polytechnic's local government studies unit to look at the way in which local authorities in England chorge for thicir Jeisurc, recreation and omenities services, will be meeting for the first time this mouth

Mr Dennis Morsh, senior lecturer in local government studies, sold last week that botween 40 and 50 authorities would be taking port, "The interest they have shown is considerable. They have slreedy aubnitted a lot of written evi-dence."

A report on the group's work will be published after tha meet-ings which were rescheduled from earlier this year becouse of student unrest the september, October and November. Mr Marsh decided to set the a particular group

November. Mr Marsh decided to set up a national working group to look at recreation charges after conapleting pflot research. "It la anticipated that the group will consider charges across the whole spactrum of leisure—from sound bath sto fishing permits. The developing trend over the past few years of local authorities becoming more involved in leisure provision makea it impersitive that the whole question of charges and charging policies is investigated and de-bated", ba said.

Gardening pundit to retire

Professor Alan Gemmell, first pro-fessor of blology at the University of Keale, is to retire in September. His broadcosting activities, includ-ing mora than 1,250 appearances on Gordenset Austion Time have ing mora than 1,250 appendixes of Gordeners' Question Time, havo mada him ouo of Britain's best known acadamica. Professor Gemmell, who is 64, has been a regular brondcaster

has baen a regular eloca 1950, when he when he took up his appointment at Keela.

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8 medical awards

Eight followships have been awarded far 1977 to graduata who want to atudy medicine by the Foulkes Foundation which was established in 1975 with the oims of furthoring

madical reacarch. They are intended to provide financial support for recently qualiwas estimated to be about 9 per field science graduates with research day off as school leavers or tha medicine and for medical graduates average number af the public.

Evidence, clues and motives in science

can use to illustrate the way in which science advances. A fittle which science adrances. A fittle over a hundred years ago, my grand-father Thinnas Henry Huxley, in his presidential address to the oteer-lag of the British Association at Liverpurd, used the analogy of a anilitary composing. He described hinself as using the elevation of his position as president or more his position as president to "cast his cycs roual the horizon of the seicatific world, to report to his colleogues what cauld be seen from his watch tower; in what directions the multitudinous numy of the im-provers of netural knowledge were marching; what impurtant strong-holds of the great onemy of ull, ignorance, hed been recently cop-tured; ond oiso, with due imparti-ality, to mark where the advonced posts of science hud heen driven lu, a long-continued siege had made 10 progress ".

This choice of a milliary anslugy was lu keeping with his puguacious spirit, for, although he described hlotself as o oton of proce who never -well, hordly ever-started o cou-troversy but only retailated in selfdefence, there can be no doubt that he relished a verbal batte. For example, when Glodstone published an article onking the our ageous claim what the Back of Genesis foretoid all that had been discovered by evolutionary blologists, my geami-futher wrote to o friend that "Glud-stona's article caused such a flow of billo that I have been feeling the better for it ever since". efence, there can be no doubt that

My own inclination has been to think of the progress of science as resembling the exploration of n newly discovered continent. Nature is there, not like an anemy rosisting our advance, but wairing for us to flud our way through her jungles and scross her mountoin passes-

In part, my choice of on analogy in part, my choice of on analogy from peace rather than war is a reflection of my more peaceable temperament, but I think it nisu reflects a difference between the position of science in his time and in mine. In 1870, the scientific way of thinking, or of solving a problem of thinking, or of solving o problem, was still struggling for recognition was still struggling for recognition in ilds country. That haule was won, and subsequent generations, including my own, have reaped the benefit: we have heen allowed to carry on our investigotions without serious opposition, and have been granted high esteem by our canten-porseries in other fields of human activity.

For most of my working life, 1 have taken this for grouted, and have supposed that the battles of a century ogo had decided the issue once for all. But in the past few years, science os a whole—the scien-tific operation to superstance of sil

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UNUCS. AILC CVIDENCE ' State is another basis for situation, and it is any particular function, the service of the service



which I chuse at ytitle for this address. The distinction between clues and evidence is much the same in science as in detective activity, and just as important. Motivo comes in rather differently, sluee there is nothing in a scienti-fic investigation equivalent to the criminal in a detective nearly the criminal in a detective novel; but it is no less important, whether we think of the mutive which drives a scientist to do his work, or the motives for which others may try to discredit his conclusions.

Clues are ludispensable in the carliest stages of an investigation, when one is trying to form a hypo-thesis which can be tested, or—per-haps more often—when one is merely wondering what observa-tions or metions and the state of tions or utcasurement to make in the hope that they will suggest a hypothosis to us.

A clue is an abservation which is relevant to the problem in hand, but which can be interpreted in but which cut be interpreted in more than one way. The investigu-the udapts one of these interpreta-tions provisionally because he gnosses that it has a fuir chance of turning out to be right, and he-enuse he can think of experiments by which to follow it up. Whot is his bosis for making these preliminary intermentations

these proliminary Interpretations and for weighing them against each other? He has nothing to go nulogy, one's first attempts at intorpreting on observation are almost ulways based either tachly genoralizations. As regarding on the second aro adaptation and condian, and in my own field of experimental

In his presidential address to the British Association for the Advancement of Science. given at Aston University on Wednesday and printed in full below, Professor Sir Andrew Huxley suggests that science needs to go back on the offensive to protect itself against those who challenge the objectivity of scientific knowledge

miamls may have evolved so os to

the last hundred years or more, of any awn field of research, the auchanism of muscle contraction. I have been astanished to find how often progress hus heen held up hy aver-confident application of the like that "contraodility" anust work all die many organs and organisais where it is found.

Not the only basis

This "principle of the uniformity of nature" can be applied in many cannexis connected with contractiin except generalizations that pre-visus wark bas shown to be more or less valid in the field within which his problem lies. In physics, those might be some general ideas of conservation ar of symmetry. In biology, I suppose the two widest and most powerful generalizations or adaptation and generalizations where the some process as the some by dio discovery in recent years that a great variety of cells, lity. It suggests, for example, that movements of apparently undiffer-annochoid innocement and inher movements of apparently undiffer-entiated protoplasm are brought shant by the same process as the contraction of a muscle. In one sense this has indeed been con-firmed by the discussion years that a great variety of cells, in oll organisms from produzoa to

century ogo had decked tho issue oace for all. But in the past few years, science, os u whole—tho scien-tific opproach to quustions of ni with a science, ond the tecluicat advances that have been modu pas-sble by the opplication of science, or omade the scapegoats for overy-ting that is going wrong in the work. Science, and the tecluicat advances that have been modu pas-sble by the opplication of science, or omade the scapegoats for overy-ting that is going wrong in the work. It is ropentedly suggested that the speed of sciencific discoverig-should be elewed, and thot scien-tists ought to suppress discoveri-tists whose findings centralic fashionable social theories are through pullitical prejudice, and it is suggested that is actually found it is suggested that the outpress discoverig-through pullitical prejudice, and it is suggested that the common oncestry of all living through pullitical prejudice, and it is suggested that the common oncestry of all living through pullitical prejudice, and it is suggested that is setually found to be the case, but on the suppress discover-bollefs, in offeet har we outpress through pullitical prejudice, and it is suggested that this contenting may be con-stitutes a hypothesis which co be in the centrineme by found to be the case, but on the suppress discover-bollefs, in offeet har we ought to ropiace advance by which it dustres wo should base our bellefs not mu-tight on suppress discover-bollefs, in offeet har we ought to ropiace advance by which it dustres wo should base our bellefs not mu-tight on the suppress discover-bollefs, in offeet har we ought to ropiace advance by which it dustres wo should base our suppress discover-bollefs, in offeet har we ought to ropiace advance by which it dustres wo should base our secting the suppress discover-bollefs, in offeet har we ought to ropiace advance by which it dustres wo should base our secting the suppress discover the ropiace advance by which it dustres ropiace advance by which it dustres ropiace advance by wh

standord works of detective what function, and in any cuso there reinforced by a number of factors etion. This of course is the source from ture is merely a useless vestige of the f chuse m while for this what was ance a useful organ in was ant merely that the strintfans somo remoto ancestur. Again, wero completely disregarded fur homologous structures in different about 50 years, but that a large boily of first-rate microscopical work perform totally different functions: of the late nineteenth century was

perform totally different functions: for instance, the smull banes in aur alldlo ear which canduct sound vibrations from the enrdrum to the inner ear are evolved from parts of the joint between the lowor jaw and the skull in reptiles. It is not merely a hypothericsi possibility shot horm could be dona generalized on these broad generalized on these broad generalized interesting—I have found a Hitle into the development, over the last hundrel years or more, mony of the key points that were established at that time turned uut to be re-discoveries of things that had been common knowledge in ahaut 1880. The value of a chue is in suggesting lines to follow up: In this case, the clue—the presump-tion of similarity hetween striated and unstring too much emphasis of the common ancestry, and to full that it is the process which is and unstriated muscle-did harm because it was given too much weight and was allowed to prevent n valuable type of investigation from being carried out.

beiag carried ont. Another example from my uwn field of work is the following. Any musclo of the voluntary, striated type contracts if it is placed in a solution with an appropriately ruised concentration of potassium ioas. In most nuncles of, say, a frag, this concentration has a quick quiset and lasts less than a minute, but certain muscles—nutoby those in the fore limb of the male, which he uses when clasping the fermi-during muting—give summth comduring unting-give smooth con-tractions that may last for hours. This was well uvestigated in the This was well investigated in the 1920s, and the plantslidu suggestion was made that frog muscles con-tained two types of muscle filme, ono which produces rapid, short-lived notypes log the uther investigated in the same way as oncoold we ment, which at the time was well. lived mavements, whilu the other produces long-lusting show constract thors oppropriate for postarul and holding activity. This iden was sup-norted by the discovery, numbe by a German anatomist, Krüger, around 1930, that two types of fibru were casily distinguished by their appear-ance he cross-section under the inderescope, and that use of these types was present only in those masoles which gave long-lusting controctions.

provisionally, that two distinct types of musclo fibre were to be found in frogs, ona used for rapid move-ments and the other for posturul and holding activity. Mean while, n mojor silvanco war modo in 1928, by Lord Adrian, of Cambridge, whu alos, died only u few weeks ogo, and Dettev Bronk, from thn United States, who died two ycora agn (each of whom, by the way, roached the highest pusition ht science in hie own country—Adrian as prosi-dent, of bio Royal. Society, and Academy of Solances). They invented a new wny of cotecting the electrical activity of

great surprise when a slow by of constraction was directly do strated by Tasaki, la Japa (ing the war, by dissecting out rather small norve fibre has outen nerve to o muscle from ately from the ordinary large to from and stimulating theme ately from the ordinary large to fibres, which produce quick on thous he the muscle. It has been shown that Krüger way feetly right in his surals to these show contractions are not aut by the muscle fibres why mansual superstance in cossist nutrisual experiance in crosses, under the microscope that is tasted cardier, llere aguin an argument he on the principle of the pellon naturu was carried too fat at hittin tras carried too fat niy first exomple, the argument imrme by inhibiting people undertaking o particular bar investigation, but in this wa the existence of special downed filtres the mutter work

fibres the mutter went even fet. and an argument which wells and an argument as a clue-the licen occeptable as a clue-the rescoren-ivas allowed ungo evidence obtained from lys vestigations of the musclesne

It might be thought that des. I have mentioned arose inaction enthusiostic application dist theory of biological evolves di-that nothing comparable colour in the physical sciences i set that it is the process when is generated the extraordinary bay slip that exists among de prezi-inhabitants of the globe. This hias is one which is due and indeed boasted of by physi-scientlets. It is the wish to addi

n wide runge of phenoments single simplu principle-admin su long as it is subordined indequate testing against energies

tul evidence. I canual resist quoting to put Ransinge from the outobiopart Runson y Cajal, the greater and anutomist nf oll time af fr greatest scientist provid Spain. As a young mayba b bren and uf the three daw porters of a theory of musice-traction which enjoyed a be vugue in the addide 1882. 172

Thirty years later, Cajal mill "I wish to warn young men spins the invincible aitraction of thereis the middle 1930s there was sufficient evidence to accept, at least provisionally, thet two distinct types frogs, ona used for saiv networks overywhere, me coptivated us specially was that the sprculation fdentified the complex substratum of the striated [muscl] fibre with the simplo returns of fibrillor framework of sil prove

have no doubt at all that there have have no count in an clac there have been enormous numbers of cases where out only biologists of all kinds but chemists ond physicists have been put on to a false sreat, or have disregarded some important observation, because of overcoofidence is current generolizations. An example from nineteenth-century physics, which had serious repercussions on the theory of evolution, was Kelvin's calculation evolution, was Kelvin's calculation of the age of the earth, based on the rate at which it would cool down from o supposed original molten state. The result did not ollow nearly enough time for the repeated cycles of erosina, sediment formation, and upheaval that geolu-gists infer from exoanination of the reacts.

Rather than odmit the possibility Rather than odmit the possibility that the basis of his orgunient was false, Kelvin asserted that the geologists had got their time scales to times too long; in fact, of course, it was Kelvin who was wrong be-cause he did not know thot the temperature of the earth is main-tained by radioactivity. To reply that radioactivity was not dis-covered until some 30 years after the coursersy does not exonerate to be argument was haved on the contraversy does not exonerate Kelvin: his argument was hased on the premise that the whole of ubysics was already known and that it was sale to ignore the possibility that there aught exist other sources of heat which had uot been identi-hed in the laborstory.

would be negative.

were published. Blarkett noentions another pnint that is reminiscent of ony biningi-cal examples: an experiment which is fact demonstrated non-consorva-tion of parity had been published long hefore—in 1928—but had somehow failed to attract attention. Blarkent's conclusion 1s: "Tho moral to experimentelists of this curious piece of aclentific history is clear. Too many af them must have been detorred from making some slople but importont experi-ments because of the predictons of a theory which they did not fully understond—for if they had, thay would have realized that it was not soundly based ".

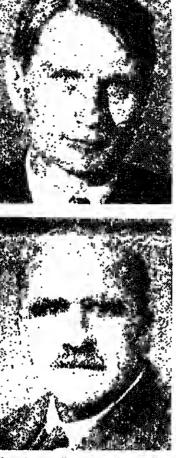
As regards twentleth-century physics, I would not dare to say anything ou my own responsibility, but a relevant example was described by Patrick Bluckett in his Runherford Memorial Lecturu IProc. Roy. Soc. A 251, 293 (1959), with corrections in Physics Today. with corrections in Physics Today, 14, ao: 2, p.86 (1961).] This was the discovery af the non-conservo-tion of parity in weok Interactions. The experiments thot demonstrated this la 1957 could have been carried out years carlier, but no one had thought ir worthwhile to try because, on the rheory then current, it seemed certain that the result

Then Lee & Ynug, in a purely theoretical paper, suggested that n certain experimental result could be easily exploined if parity were not being conserved, and they pointed out that none of the exist-ing evidence for coaservation was relevant to work (interaction relevant to weak interactions, relevant to weak interactions, likitio a few months of the appearance of this paper, numerous demonstrations of non-conservation were published.

Origin of species

No use will dispute the proposi-tee that actual evidence should be given precedence over mora indirect micronces which are appropriate ooly for suggesting new approaches to the solution of the problem in hond. The examples I have given are ascribable to nothing worse than

Science's independence is threatened by being used for political ends



(Above) Trofim Lysenko, whose unorthodox ideas on genetics were imposed on Russion scientists, ond (below) J. B. S. Holdone, a former slounch supported of the USSR who publicly dissocioled himself from Lysenko's views Lysenko's views.

I have often wondered what topic could, in the second half of the twentieth century, generate emo-tions os smong as those which oroso

to a subcreasing new approaches. Subject new approaches which is new approaches. Subject new approaches where the second half of the

tions even of some al my scademic colleagues: unyano who even read the book was liable to be regarded os a rucht and o fasrist.

Fact and policy

Similar expressions filled the cor-respondence rolumns of The Times a few months aga in the roarra-versy over the things that the latter Sir Cyril Bart wrate in his ald age. These reartians took me by sur-prise: I had supposed educoted in this country to have reached the level at which it could distinguish hetween questions of fart, to be decided on evidence, ond questions of the policy that should be adopted in the light of the facts.

There is one big difference betweet this debate an the inheritance ability and the debate on evolution. The event which forced the public to take evolution seriously was the publication of Darwin's Origin of Species in 1859. Darwin had become empiriced of the fact of evolution by observations that he

He is intent right left for invitig kept quiet on evolution for two decades until stimuluted into publi-cation by receiving in 1858 the fonous lettor fram Alfred Russell Walloce, who had independently thought of nutural selection some 20 years ofter Darwin, But Dorwin hed nes been tille during these 20

The mercly that he is descended from present that the change had hear present that the change had hear process of natural selection. The importance of the delate ward fue actual question of the neural selection had occurred, he whether are not so much the actual question of the delate change had hear the heart of the change had hear the heart of the change had heart the theorem of the heart of the delate or the heart of the change had heart the human ability is inherited, and they great the inherited differences and heart the heart of the change had heart the human ability is inherited, and they great the inherited difference wards they great the inherited hearts they difference wards that made errolution a human fractions in its time; in the first many factors that made errolution a human is species of animals, and plants. This was true hout af that most first meeting to the reaction the best of the British Association, the controversy hy some terms that is delated the reaction the best of the later controversy hy some terms that is then y differences that is the best of the later controversy hy some terms that is then y difference had here the investion of the later controversy hy some terms that is then y difference had here the investion of the later controversy hy some terms that is then y difference had here the investion of the later controversy hy some terms that is then y difference had here and the bistop of Oxford In 1860 and also of the later controversy hy some terms that is then y difference had here the investion of the later controversy hy some terms that is then y difference had here and the ware for which here here the here and the unset in the United States of animals, and plants. The here human to the uniter in the first metric of a claim to the reaction that the vert of the later controversy here human is the unset in the

ony scientist who oncaly took the position that as evolutionary origin of Man from unce by a random process was samething that scientists

d cess was samelling that sclenilist onght not even to contemplate be-couse of the chunce that the con-clusion would be in conflict with the story in Genesis or with the idea of a divine element in the spirit of num. In contrast, it does seem that there is now a hody of sclentists who take up the equivolent of that position in relation to the haritohi-lity of human ability, who regard d the assumption of equal laberited ability as similar thing which does not establish it, and which it is posi-tively wicked to questian because the conclusion might disagree with their social and political preconcentians.

centians. Attempts of this kind to subordin-ne selentific judgment to political ends are misguided even from a strictly practical point of view. Policies based on norme nsump-tions are likely to lead sooner or later to disoster, in the case I hove here discussing, for example, if in its true that differences of ability are to a large extent inherited, then nf evolution by observations that he mode during the vayage of the Benglo in 1831-36, and the idea of natural selection as the chief anch. nism of evolution had come to him by 1839. He is often ridiruled for having kept quiet on evolution for two decades until stimulated into publi-cation by receiving in 1858 the But from a wider viewordint.

But from a wider vlowpoint, 1 regard uny such attempt to deflect scientific cunclusions for political or social motivos, however well-20 years ofter Darwin, But Dorwin had not heen itle during those 20 years; he had onussed an over-whelming budy of evidence ond argument which he put into the Origin of Species and which was able to overcome public resistance to evolution in a few years. The question of inheritance of ability, however, is not in a coru-parable position. It is notorionsly difficult to separate the genetic from the social component in the doterminating of any aspect of

throw the social component in the dotermination of any aspect of human performance. Even the strongest proponent of substantial biberized differences is aware that a large social component slso exiats, and that there is much uncertainty or the magnitude of the science, which we muse cherish, is under attack nowadays uot only in the con-text 1 have been apeaking of, for use ocience as a lever for political or ideological purposes. One of tha

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in the USSR. This was expressed of that hidy to the Royal Society, which was made public in the July issue of *Physics Bulletin*. The conneil of the Institute of *Physics urged the Royal Society*

and merely to moter to the Academy of Sciences of the USSR, but to enforce that protest by die threat of terminating their pergramme of exchange visits of scien-Royal Society declined to take any such action, and I am ricar that they were right. These rictions of oppression, not only in the USSR, Czechoslovakia and other Iron Curtaln countries but also in same South American countries and elsewhere, are soffering not for their scientific opinious has for political acts unrelated to the fact that they ore scientists.

The position is totally different, for example, from that it was in the era when generics in the USSR the era when generics in the trans-was domineted by Lysenko ond his followers, and the scientific career of anyona who sdmined the evi-dence for Mendelian genetics was brought to on end. That was indeed a situation where building scient a situation where individual scien-tists in their caparity as scientists, and scientific organizations as such, had full justification in bringing whatever pressure they could to bear on the authorities in the USSR to resture freedom of scientific thought and investigotian

The climax of this affair was the notorious session of the Academy of Agricultural Sciences in August of Agricultural Sciences in August 1948, which was endorsed by the Academy of Sciences of the Soviet Union itself, and which re-estab-lished Lysonko's daminating posi-tion and initiated a drastic purge from universities and research instifrom universities and research insti-tutes of everyone who gove any credit to Mendellan genetics. This did stimulate on appropriate re-sction from many scicotists abrond : for exomple, nearly all foreign meu-bers of the Academy of Sriences of tha Soviet Unlop resigned, laclud-ling Sir Henry Dole, who had recently been president of the Royal Sociaty.

Socially been president of the Royal Socially. To his eternal credit, J. B. S. Haldone, formerly a stanuch sup-porter of all things Soviet, publicly dissociated himsell from the Lysen-koist position which, as a geneticlst, he could not fail to recognize as openly anti-acientific; J. D. Bernal, on the other hund, was apong the on the other hand, was shong the few outside the Soviet Union who tood the party line and continued to deleted Lysenke's doctrines. The persecutions of the present

The persecutions of the present day, however, are not directed against acionific doctrines or against scientific inquiry as such; they are directed ogainst individual chizens with have hud the courage to speak up against oppressive features of the rugimes under which thoy live. Among these brave hudi-viduals there ore, for axample, writers and medical men as wall as acleutists. aclentists.

Human rights

The oppropriate reaction therefore comes from us not as scien-isis but as citizens; if we wish to join in some corporate protest, it should be through a body whose prime concern is with human rights and not through one whose pulme concern is with science. If a scienti-fic body publicly takes a step whose justification is political and not scientific, it will lose the right to chief that it is conford purely in the claim that it is acing purely in the defence of science on some future occasion when it wishes to speak out agaiost, say, a repetition of the Lysenko nifair.

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AND STORED EDUCATION SUPPLEMENT 4



On holiday at Warwick

British universities lead double the vocations many become cosma-politan leisure centres, more Ambre Solaire than Tachtus, more Terry politan leisure centres, more zentre except at mean solaire than Tacitus, more Terry drive elsewhere.

Towelling than examination rubrics. Glancing through the brochore of the British Universities Accommodation Consortion, which promotes holiday lening and conference (aci-ities, I saw that I could stay at the Queen's University, Belfast, "near the Giant's Canseway, the Monntains of Monrue and the largest freshwater lake in Europe ", or Aberdeen University " at the centre of the exciting North Sea Gil industry " or Kent near "where Henry VIII is said to have wooed Anne Boleyn".

Comparing the brochures of Thomson Holidays, BUAC and various others. I had whittled down my holiday choices to Teneriffe, University College, Cardiff, Babana Bay m Warwick University. In the end Ichose Wsrwick, because the water there seemed least likely to upset my slomach, Arriving at Warwick In Inilliant

restful cnottryshie that surrounded my sun specs and the battle of the holistay camp. A car drear up in front of men anr through its apen windows cante spunds of shouting, mination and abuse. Raised odult roices were drowned by the screams of miscrable children beaning their fists on the upholstery in

ilesperate rage. It was a family holi-dag. This was one of the unclear family loss, exploding in little pockets all orer the campus, that pay 150 m week for a six bed holidhy flat and contribute 1350,000 to the univer-sily's turnaver. Last year 15,000 people stayed a total of 40,000 mights in vacation accommodation at Worwick for conferences, youth blag. This was one of the unclear fami-lles, exploding in little pockets all order the campus, that pay 150 m week for a six bed holidhy flat and contribute 1350,000 to the univer-citate company. Loss were 15,000 British universities lead double lives. During the term they are inhubited by the sort of people who read this column while on duty at the force in the term they are inhubited by the sort of people who read this column while on duty at

> While the porter explained that I was not expected and that h - had never heard of me, I daydreamed about the sort of hard-sell huliday brochure you could write for a place like this. FOR UNLY [50 a week lovely Warded UK

Warwick University can be yours. Ideally situated between Corentry and Leamington Spa, this resurt Is only 20 minutes on foot from Is only 20 minutes on 1001 minutes Kenilworth, 1000 hintrs from Watwick Castle and 17 treeks from the Edinburgh Pestical, WRANGLE at your Jeisure with a

misauthropic porter while a not heat informed of your booking. "Ol, they're always dropping us in it. How ways are you here fur?" Just a few days. I'm on holiday ", I benued.

On your myn ? "

The tonken at my Paisley heach shirt, my sum specs and the battle of tanning lation that lay on top of my bag. He had decided I was peculiar and eyed me suspiciously. "This isn't a batel, you know", he said, standing beneath a "We are members of the Heart of England Thurist Board" sgn.

Thereafter, each time I passen, his eyes trailed ate with great sus-pleion. Once he shonted a good 20 ft: "They's the boliday poing?" I shall be making a comment about him in the risi-tar's book

cumment about the in the cise of tot's book. WATCH the expression of disbelief on the gurdener's face asyon be spreadcoded outside the physics building in floral shorts and a such a

son hat. THRUL at a get-ta-know-you discu in the students' noise where the workl's most hearily bearded disc jockey presides over a completely empty dance area, the surrounds of which are closely parked with people who wish he would shut

"Come on, dance", screanted the disc jockey, who was clearly having trouble getting this gig out of the members' enclosure and on to the starting line. He

and the centre of the flore and gave, way to sporalic muscle twitching. It was not until the hars closed that the Open Uni-versity boys moved in, frugging and chugging and hugging till the gig reached the florishing tape und the disc juckey went home, exhausted. GIVE WAY to a holiday romance : something to be picely downered

S. Aler

through a thunder storm. There was a fair bit of suspense and the soulents watched in slience.

Sindents watched in silence. When it ended an earnest announcer's face came up on the screen to say: "And now n doca-mentary un welfare prarision with . . "In a body and without interiag a word, the 311 students go up und left me above in the vast room to contemplate the hiccups in our coring machine. There are also Opon University

our curing machine. There are also Open University students here for o summer schund. It is a wontleful opportunity for them to see how regular students go about things. At first they sit earnestly in groups discussing life and the postal system, but then real-ize this is just not nealemic and go watch Knjak. The whole point about i rory towers ond dreaming spires, after all the the account of imaginations, part. The mulflats where you they kissed that girl where about A levels all the the a whom you later married here, sprinted quost-Florentine part What you culled the basis of the VD clinic ", have now been again solres, after all the the account of imaginations, about this point and the postal system, but then real-ize this is just not nealemic and go watch Knjak. The whole point about i rory towers ond dreaming solres, after all the the account of inaginations, about the postal system, but then real-there is a state of the postal system, but then real-vide the postal system, but then real-there is a state of the postal system of the postal system, but the postal system of the postal syste and on to the starting line. He carnestly in groups discussing life in and the postal system, but then real-rock to reggae, funky to folk, whapbabaloohamawhamham , forget it. They usere not even looking at him. Every now and then couples tralked to the conve of the floar and paye, way to sporadic muscle

Dear aunt,

llave just been to Stratford, since it is nearby, to see Henry VI purt one. There were only side bulkony seats left which entails leaning for-

time to the spirit a list of time in Next year is a toss up between the ventured to the other side. And a little ogricalitaral college list heard the got shot by Joan of Arc.

Worwick is fine, but the in very add parter here.

Never mind, you can take as for a from the fact that the case is still littered with buildows at

normals of sand. Warner dire sity, like socialist atopic dire under construction and he she langer of completion. Do you know anything doe to porter here? while baired?

Status : Senter Junior Tesching Lev Degree Non-Degree Degrees : Postgradua

No substitute for evidence firmly based on experiment

from preceding page

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low overage performance of American Negroeo on tests if certain kinds of menual ability may be en argument, against allowing them to occupy positions of responsibility, while to an egalitation the very same fact is an argument for pro-viding not merely, equal opportu-nity but compensatory advantegas such as are implied in the "affirme.

or layman, con foresce with mity certainty the long-term outcome of any particular course of uction. The results of scientific investi-many ingredients thet should enter into any clecision. Their advantage is that they me-or should be-more reliable than opinions for-med by less systematic pure dutes, but they suffer from the corres-ponding limitation that they pro-med by less systematic pure dutes, but they suffer from the corres-ponding limitation that they pro-recommended in farour of some pre-lininary steps in this direction, these scienticit's special duty is to increaso the reliability and the some of rele-vant knowledge as that they pro-the reliability and the some of rele-vant knowledge as that the simplest in the same time, advocating eugenic to make it ovailable to his fellow clutters, and, not least, to make line they are uncertainties and the soundly besed on neuron events once, but he forfeita that claim if he presants preliminary or weat a sume tho as long as what he says once, but he forfeita that claim if he presants preliminary or weat and, not reason or the sumples once, but he forfeita that claim if he presants preliminary or weat and, not reason or the sumples once, but he forfeita that claim if he presants preliminary or weat and the same table event in 1977 or weat and sume table event in 1

Walling for the service service for pro-result for the service servi

primote his own theories at the exponse of Memdellam was that his theories would allow rapid expon-sion of agricultural production while Memdellam was a mere academic theory. The result of course was bit also for Soviet upriculture. This is the result to be expected when we base our theories on what we actual evidence. actual evidenco.

My message, then, is that neither My message, then, is that neither chies nur nutive ore permissible substitutes for erlilenco firmly based on experiment and observen-tion. There are temptations, on acsthotic grounds, to give too tooch weight to broad unifying principles which doorvo to be used only as and there is another set of lowning.

urvived the epposition based a lay prejudice, but succumbed 2 yoars or so later to a misoples

Two-thirds of lecturers think their earnings fair

The typical academic is married, with children, lats a house or flan with chuldren, has a house or that oo o morigage and owns a car. He is more likely to vote Lahour, hat is including tourards the Conserva-tives. This year he took his holday in Britain at an average cost of f200 to £300 for the whole family. f200 to 1300 mr the whole framiny. This pictute emerges from u NOP readership survey of acadealies in higher education, published this week. In shows that in the past five

higher education, including the past five week. It shows that in the past five years the academic lifestyle has changed. The lecturer's workload has increased at the expense of research, and he is unlikely to have changed his joh. Economically, he feels the pluch but does not regard hiself too badly off. Contary to popular helief, 66 per ten of lecturers are shown to think their present conomic climate. This was fell least in the universities, how-ever, where 44 per cent thought if the case compared with 69 per cent in polytechnics, 76 per cent in col-leges of further education ond 65 per cent in college of oducation leges of further eulocation and 65 per cent in college of oducation lecturers. Conversely, carnings were thought unfalt by 50 per cent of university lecturers; 25 per cent in polytechnics, 30 per cent in col-leges of education and 20 per cent in further collection.

in further education. Submics across the board tend to fall in the £3,500-£6,000 bracket. According to the survey, one in three ucademics has a salary of orer £6,000, 12 per cent are between £4,500 and £4,999, 16 per cent be-tween £5,000 and £5,499 and 11 per cent between £5,500 nod £5,999.

cent between 15,500 nml 15,999. The survey was conducted on the basis of interviews with 506 lectu-rers in England and Wales, both In further and bigher education and a similar one on 293 lecturers in Scotland. In England and Wales, 30 miyershies were picked accord-ing to size ond type from the Com-monwealth Universities Year Book and a random sample of five lectu-ters picked at each. Interviews ters picked at each. Interviews were obtained with 126.

THES/NOP readership survey

per cent Conservative (49 pcr sive in ccm); 12 per cent Liberal (nine daris.

have stocks and shares, as against six ner cent.

sive institutions with uniform stan-

cent); 3-2 per cent Liberal (nine per cent and three per cent Nationalist (three per cent). The academic's lifestyle remains better that the average member of the public Nenviy all have bank accounts, compared with half the general public. Some 17 per cent bave unit trusts, as against four per cent of the public, and 19 per cent have stocks and shares, as against four per cent of the public, and 19 per cent have stocks and shares, as against four per cent of the public, and 19 per cent have stocks and shares, as against four per cent of the public, and 19 per cent have stocks and shares, as against four per cent of the public stock and shares as a four per cent of the public, and 19 per cent have stocks and shares, as against four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and shares as a four per cent of the public stock and the per cent the public stock and the per cent single group, 39 per cent, thought the quality of students was as good Perhaps surprisingly, more than net in five nurn a fint or house; owners being equally spread be-tweep universities, polytechnics and culleges. Over half, 55 per cent, are

Trom polytechnics, 119 lecturers picked from staff lists were finally interviewed; 114 from colleage and 11 per cent ten their education and 137 from further education education and 137 from further education the interviewed; 114 from colleages of further education, however, fand, The interviews reveal the neares mice to be a generally less conserve tive creature than the rest of the and the post of the the state mice to be a generally less conserve tive creature than the rest of the country as a whole; 129 per cent of the country as a whole; 129 per cent conservative tills per cent, in all subjects. The conservatives how a saving to the main duriversities and 44 per cent taken to the post of the conservatives how a saving to the main the polytechnics and universities around the last year. Submet for provided by the same around the state a whole; 129 per cent of the country as a whole; 129 per cent conset liker and the polytechnics and universities around the polytechnics and universities around the state the state the state the main the basis election. The person the oblic sectors a whole; 129 per cent all observers while the closer event. Submet for the state the state the state the state a whole; 129 per cent all subjects. The show the state the state the state the state and universities as roughly equal, the state the state the state the state and universities as roughly equal, the conservative have a for met conservative have a for met conservative have a for met conservative have a for the state the state the state the state and universities as roughly equal, the the state the state the state and universities as roughly equal, the the state the state the state the state and universities as roughly equal, the the state that the state the state the state the state the sta

This is borne unt in some extent y lecturers' tesponses on whether their institution paid enough atten-tion to the destination of graduates. remained steady because of the ex-Despire the extensive careers ser-rices, nearly 30 per rent gave the mission "no". Roughly one quarter of lecturers in each type of institu-tion gare this answer, with the exception of polytechnics where the proportion was about one third.

From where du academics get their news and views? The most popular newspaper is apparently The Guardian, read by 38 per cent of those interviewed. Its readership is strongest in universities and among junior staff in the arts and

Academics

SOME OWNERSHIP DATA C.It.† Eng. and Wales Scotland

OPCS

social sciences. Second Is The Topes, read by 22 per cent, which is strongest in universities and col-leges of further education, again among junior staff and particularly with social scientists. Third choice

bigher concation in average or tealers train bigher concation in average per issue has slightly slipped; in the case of The THES from 41 per cent pansion in higher education. The decline bas been greatest in the polytechnics, while there has been a big increase in colleges of educa-

It is mainly read in libraries and commun rounts, with only one in five readers buying their own copies. The chief reasons for reading it are: news in higher education (20 per cent); articles of interest (17 per cent); job ndverusing (15 per cent); job naver-using (15 per cent); new develop-ments (15 per cent) and for keeping up to date (13 per cent). The THES still maintains its place

The THES still maintains its place among the quality journals. Including further education, 28 per cent of academics read it compared with 15 per cent tha New Scientist, 13 per cent The Times Literary Supplement, 12 per cent the Listener and perlaps surpris-ingly, 14 per cent Punch. Which gues to show that while arademics take their work sciences, they also have a sense of humour.

lave a sense of humour. NOP Market Research Tenchers Survey 1977 Vol. 2 Tertiary England und Wales.

Frances Gibb

premiered in the last four yeacs horo been one of Benjamin Britten's last works. A Birliday Hansel, based on peens by Robert Rurns, During the 10 years since he be-came professor, he has written more than 40 wocks, among them his first opera, Boncht of Falass, which is based on o Robert Stephenson ohtery and was performed by the Welsin National Opera in 1974. He is increasingly attracted to opara. Nevertheless, as a Socialist who Nevertheless, as a Socialist who grew up lu a Glamorgan mining community, he is worrled by its inaccessibility.

inaccessibility. Parily for that reason, his second opera Murdec, The Magicion, was written for Harlech Television and his third, When the Old Man Does is Alwoys Right, which was prem-lered at this summer's Fishguard Fostival, is a children's opera based on a Hans Christian Aodersen story. Future plans include two more one-hour talavision operas, an opera for the Royal Northern College Opera Group and works for James Galway, collist Paul Torteller end planist Roger Woodward. In tho meantime, his works are being meantime, his works are increasingly pluyed abroad. his works are

He is elso, aurprishigly, one the best represented an record living British composer:

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DEMOCRAPHIC RACKGROUND

All Eng. and Wales Scotland

The hills are alive with a one-man industry

the clarinet

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Alen Hoddinoit is almost o nusic industry in himself. His three jobs, is professor of music at the Uni-versity College, Cardiff, artistic director of one of the clty's two ennul music festivals and com-poser, frequently keep him buoy 20 haurs a tlay. It is, however, a diet ho is used by having followed it for the past 10 years and having combined like

10 years und having combined the Plans to expand the department, reaching and writing of music since teaching and writing of music sinco taking his first academic post, at the City of Cardiff College of Music and Drama, 26 years ago when he was 22. By 1959, when he became a letturer ut Uulversity College. Water he had already written that its symphony, piano sonate the wite of Welsh dances as well fi forecertos for piono, ohoo, harp. His third poblished work out of a corpus thot now inclodos almost 100 apus numbers, the elarinet

r. Datul Wynne, no



Professor Iloddinoti-no brooding over creative art.

triug Choir and

run a full-scale orchestra co well including that from the Welsh Arts ao smuller groups such as the Pales- Council and local authocines-in Mo² Max thict noiv includes almost Annuag the statt or Walkers senior composer, David Wyne, now statt but of ledien, which is first score programment also used the university statt are contrasting a senior composer, but of ledien, which is first and cellist, 12 instrument is used the university statter he way will are contrasting a senior contrasting and province of languages, aspecially a senior and language after Wolsh and Leng invokes of ledien, which is his or the standard classical repertore to the standard language after Wolsh and Leng invokes of the lenges are to head the music department is used the university state to head the music department is used to head the music department is used to minestify polities, the finished to head the music department is used to minestify polities, the finished to head the music department is used to minestify polities, as norther and music arcdives and the finishes opened up by the statt and Fioriture; and statt are for sorrading static as well as the statt of the other works.
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 Muse other works, and the music department is user and a statting in the statt and fioriture; and will a classe and the music department is user and the music department is user when side the statt and fioriture; and statting is more have been contrasting also been vinted to the statting in the statting in the statt and fioriture; and the music department is user and the music department is user and be statting in the statt

Appointments

Research fellow : B. Low (chenge

Assistant in languages: II. Roll for muni). Members of Count: J.C.I

White (direo years), Sir Reter

Narih-East London Polylether

_(gerlairies) -- Prod

Grinnicy Evinas-(26,355 from 2 DHSS 10 provide continued sets for the period July to Detente 1 1977, of the ordical genometry a search project cutiled "stads 4 stroke and fractures femar".

by Patricia Santinelli

and Mila Goldie

Universities

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Polytechnics

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discuses.

Medichie

NOTICE BOARD

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The International Scientific Film Asso-ciation Congress and Festival 1977 will be held in Venfre from Sciteniher 18-24. Application forms and further de-tails of the roorgess and fostival can be obtined from Aliss Dora Thomas, at TRF/1 Shell Centre, London SEI 78A.

C38,450 from the SRC over a period of

three years, for research on the deter-mination of amicentar structures la the gas phase by electron diffraction.

Genetics—Professor J, R. S. Finchan-(30,353 from the SRC over three years for research on the enzyme structure in relation to gene structure and re-

Social Administratium—Dr J. P. Trise-lious—E30,075 from the Department of lieuth and Social Security over theco years, for rescords into transmitted deprivation : a retrospective study of adopted persons with special needs.

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The Standing Conference of University Appointments Services (SCUAS) is holding its lifemial national confer-cate at the University of Unit from September 5.8. The main theme of the conference will be the problems of memory students and conference of the mature students and compositions of speakers include : Mr Oakes, Mintster for Education and the Partick Nutrgens, director of Lecis Polytechnic, Furthee information from T. A. Smith, direc-tor and conference of Science States and Science Science States and Science Science States and Science Science States and Science S for and conference orgonizer, Careers and Appointments Service, University of Itali, 6 Percus Avrinoe, Hult 1116 ZSV.

The taxiolog division of the Associa-tion of Certificit Accountants is hold-ing a one-day course on the 1977 bud-

Grants

Birminghum

minorities in the local ly sector,

Library—Mr G. A. Bell—£21,900 from the Sports Council (un a contoutol docu-incatation centre for sport, physical education and recreation.

Biological Sciences—Professor W. D. P. Stewart—U36,875 from the NERC for his work on the biology of Scattish freshwater locks. ans work on the bology of Scattish freshwater lochs. Physics — Professor W. F. Spear — £48.770 from the SRC over a period of three years, in connection with bits

Saturday September 3

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& Manufacturing

The University of Aston in Birmingham, Gosla Green, Birminghum B4 7£7. Tel: 021 359 36/1

_£3.00

Industry'

* How can engineering ettract better recruits? * Is melliematics teaching in schools good e oough? * Aro the rowards of en engineering career worthwhile?

Industry. It has just been published by the University of Aston on behalf of the British Association fur the

Support Papers (which amplify certion topics) _____ £2.00

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These and many other pertinent questions are oxemined, and positive recommendations made, in this independent report sponsored by Government and

Advoncement of Scisuco. Main Report

Both volumes combined_____

obt sinable from: The Information Officor,

"Alternative Paths For Planning ", a one-day conference is ucing held on September 12 of the department of Town and Conney Planning, Treat Polytechale, Speakers hadnobe: Pro-fessor M. W. Tiehns, head of the de-partment of mechanical englacering, London University Queen Mary Col-lege and Gerald Faley of the Schurt of Architecture, The Architectural Asso-clation. Furcher details from Phillip Bracht, department of towa and country planning, Treat Polytechale, Button Street, Nottingham NGI 4BU. Developments in Irroversible Thermodynamics a discussion neet ing will be held on September 21 in the Anatomy Theatre of University . . .

" Practice and Design In the reatment research into the development of autor-

ohous silicun devices. Edinburgh

Sucher engine and the second s Chemistry—Professor J. I. G. Cadogan —£56,193 from Innucial Chemical In-distries I.(d. nour a period of four years, for research on thesphoranyla-tion techniques for attachment of dys-stuffs to cellulose.

Linguistics—Professor D. Altercronible ~123,058 from the SSRC over four years four multis, for a socialinguistic investigation of Edinburgh speech. Genetics-Professor G. H. Beile-£81,069 from the MRC over three years for research on genetics of malaria

Medical Carilinkogy – Professor T. D. V. Lawrie – E24,000 from the British Henri Pumdathat for research over three Chemistry - Dr D. W. H. Ruakin - Neurology-Professor J. A. Shupson-

Open University programmes September 3 to September 9

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det on September 6 at the Cafe Royal Regent Street. Fee: 540 plus VAT.
Further information from Gav Jordan, Sunter One Contract of the run on September 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 14 at the Polytechnic of Central London. In Sentember 12 at the disconting sentember 12 at the disconting of the Ross.

"Effective Management of dam pro-resching projects" a semificar organized by the Control Data Institute will be held at the Charcester Hotel, Londhon from September 19-21. Further In-fromation from Teresa Barmed, Citi, 77 Wells Street, London WI. Write (unice years), Sir Rete-lirechiu (cappainted for three yang) The flan the fard Balerno of Grag Connellior J. G. Gray; Profess 52 man Feather ; Connellior Peter 52; . . .

A nuc-week intensive residential 16mm film production course run jointly by Chephola Film Productions Ltd and the University of Salford, will be held at the university from Septemier 24 to October 1. Fee: £150. Farther details from Alison Tonks, University of Salford, Salford M5 4WT.

Press officer : Gillian Winston £32,910 from the Mitsendar Dystrophy Group for medical research into import-lar and acura-mitsendur diseases. Romenting In someout of a tog by

Midwifery—Professor C. R. Whitfiehl— 220,000 from Tenovos-Scotland for a proposed evaluation of premital bin-physical monitoring of foetal health hi high-risk pregnancles. Neurulogy-Professory J. N. War-Ei 16.277 from the Muscular Dary Group for one year from Odder 1977, for research tha neurope

Leeds

Plant Selences—Professor II. W. Wurd-house—£25,000 front the Rank Prize Puods over three years for a pilot study towards extending and increasing the productivity of cond-temperate grassloads

Llvernool

Child health—Professor F. Harris— £28,200 from the BOC. Medishield, in support of an Investigation of interlate and methods for in vivo measurements by Pafricia Santinelli Blo-engineering and medical physics mill-Mr D. Amis- 5.3,000 from 101,

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five Sears.

part of a degree by learning obuit drug abuse under o now programme run by the neighboucing University of California at San Francisco. The coucsa, "The Phormoculogy of Drug Abuse", is deslyned for lard-coro nddicts and others. Taught by groduato ond posi-graduats and post-doctoral students from

the university, it carries ocademic credit towards e degree, and emplusizes su objective approach to pay cheactivo drugs, exploring huw drugs affect the human body, rather than probing the psyches of drug

The course's main objective is to gives "useful" and "cslevent" in-formation, not to clauge the sudents' behaviour. Questionnaices filled in after the course suggested, however, that it had modified their views on drug uss. One said his outlook had changed baceuse most of his experiences had baen based on misinformation. Another said it faught him what to expect without risws on drug uss. One said his outlook had changed baceuse most of his experiences hed basen based on misinfurmation. Another said it raught him what to expect without experimentation.

North American news_ Medical schools resist 'overseas' influx

from Michael Binyon WASHINGTDN America's heading medical schools have began a campaign of definite of the Government that could lead to substantial financial penultics. They are refusing to renive normal admissions criteria and udmit a guota of sindents transfercing from foreign medical schools. This is despite o clouse in a Congressional Act last year instructing them to do 50.

earlier this year that are registration tresponded on university autonomy. Kingman Brewster, while still President of Yale, led the fight against what he considered "oun-fageous" Coungressional Intrusion on the right of universities to cun-

on the right of universities to cun-trol their admissions polletes, Now Johns Hopkins nuclical school, probaly the best known in the country, has told the Guvern-mont that is will not ablde by this requirement. Conusequently, it could forfeit up to \$70,000. Other universities also defying the law include Yale, Hacvard, Stauford, University of Csliformie at Los Angeles and Si Louis. The legislation, slipped through last annunn alajost unnoticed

last antunu alatost unnoticed during a joint conference hetween during a joint conterence nerweed staffs of the Senate and the House of Representatives to work out Federal Govecument subsidies for modical schools, requires medical medical schools, requires inedical schools to accept as third-year transfec studcats as many Ameri-cao clifzons as possible who have competed two yeacs at forcian medical schools. Otherwise the schools will lose their subsidies of up to \$1,400 per student.

Drugs course

Prisonecs la San Quentin con eurn

for inmates

despite o clouse in a Congressional Act last year instructing them to do so. Several medical schools argued earlier this year that the legislation responsed on university autommy, Kingman Brewster, while still President of Yale, led the fight

Some foreign schools have eppar ently been specially organized to cupe with this influx of Americans. And it is widely believed here that the medical training in some of these foreign schools is poor.

Nu one knows exactly how man students there ace in focelgn med cal sobools, but one estimate reckons at leost 1,500 will qualify for admission as loreign transfer unler the new law. These students would have to be

divided up maiong the 100 or a medical achonis in Americs, rough uccording to their size, though specific guidelines have not yet heen worked out by the Depart-ment of Health, Education and Wel-

Voting with their feet Fay Haussman on why

Brazil's middle-class students

need worked out by the Depart-ment of Heafth, Education and Wel-furc. Because of the complexity of the issue, the measure wild ant effec-tively come into force until the 1978-79 academic year. Monnwhile, Congres is to hold hearings on the issue when it recunvenes usat mouth.

West Germany

Retirement at 70 plan

Say-shared pictures of this pull-bay-shared proposa. The Bill, already approved by in white on education and labour, siso makes it illegs for unloss to nego-tists couracts that provide for in force retirement cerlier then 70. Many university administrators it would mean a heavy increase in their costs, since ecademic selaries for samerally highest of the end uf a teacher's career. Even more worrying, it would for young scholars and graduetss when the job market for young eca-tering is elready very difficult. The new proposal would mean their prine but wbo cannot bo dis-missed because they have tenure will heve to be kept on for enother

A Bill in Congress to nicke it lile. Is for universities to force em-proves to retire before the cat emong the proves the bill. The dec is generally the serve the fore seeeble future. It is for the foreseeeble future, it is cay charged proposa. However, relatively fow students to work to continue to do so. This. Discussion to the conting to the c

some areas but not in others. The psrcsntage of blacks in State col-

boyling to allow those where were seen to overk to continue to do so. This pensions and social security payments.
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end of era by Günther Kloss

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representing n growth of 700 per cent over 1.1 years. Phis growth has, of course, not

come about without divlocations. Students complain that the public,

 Far J HallsSmith on Why
 Brazil's middle-class students
 Brazil's middle-class students
 have taken to the streets
 have taken to the streets
 ther methy a decade of quiet
 The University of Brazilia have
 The University of Brazilia have
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 the seek th Tessae within it rechniverates that be and the second to be additional optimized to the military community of the second to the s

Israel

Further steep increase in tuition fees

from our correspondent

venient. At a sime when the lirazilian economy started on its dynamic phase of expansion the student riots, with their public upheavals, were seen mostly as dis-ruptive unisances and thus geners

ministers of fluance and education Meximum tuition fees in the univer-Meximum tuition fees in the univer-Meximum tuition fees in the univer-higher than 6,350 Israell pounds.



HIGHER EDUCATION SUPPLEMENT New Printing House Square, London WCIN SEZ. Telephone (1)-837 1234

Dogma of local control

some of the detail of the proposils. What has not escaped the public where there was a good degree of eye, however, are the heary sugges-tions for the control of universities. But what is more important is Four different proposals have been put forward, and bringing universi-ties under some kind of local or regionel control constitutes three of the source interval is more impartant is how uccountable intirersities should be to local needs, eud whot is even meant by accountablity? Local childree are unlikely to go to their

thrust forward by one or two mem-bers of the education subcommittee without full discussion. Be that as it may, what is the ostensible reason for them? Launching the ducu-otent recently, Joan Maymurd, MP, sammed it up in one word : "Accountability".

Thot is a strange accusation at a umo wheo universities have been completely hamstring in their development through lack ef nooey. Although once given their gronts they may spend them as they vish, 90 per cent of the nuncy is sewn up in salories, wages and ng commitments, and the for decision-making is mini-

Major building, which is the key to blg developments, has not been possible for years, ond when it is the University Grants Committee's intervention in university offeirs is at its greatest. The UGC has the anal word on whether or not they cau go nhead,

Oea can argue that the UGC is not democratically elected, but in this it is no different from the Department of Education and Science which controls the rest of

The Lahour Party's promasts for local government have been greeted with a furore of protest. It is generally felt that local government has been through coough in tho past few years and does not want-indeed, cannot-afford utother major upheaval. This feeling best tended to obscure some of the detail of the proposals.

local university os they are nationol institutions, drawing students from This is generally thought to be rery much au eleventh hour uddi-tion to the consultation document, where the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the consultation document, the transmission of the transmission of the transmission to the transmission of the transmission of the transmission of the transmission transmission of the transmission o but so for that matter is British Ruil

If what is meant is that univer-sities should discriminate positively in favour of local working class children there is no guarantee that placing them under local control will using this about. Universities cau be elitist or socially responsible under the UGC, as polytechnics can be elitist or socially responsible under local nuthorities.

The endemic conflict between ublic accountability and institu-tional autonomy cannot be sulved by some horchpotch system of incul by some holdhjotch system of lucul cuntrol for universities completely at odds with their aims, practices and principles. A ceutionary tale is provided by the National Health Service, under the new regional structure of which mulic interest has been submerged beneath layers of bureaucrecy and special interest f bureaucrecy aod special Interest. The Labour Party would de better

to look at the present system of local control for polytechnics, which is so after compared unfacourably-with the universities, and consider giving them a system akin to that of universities, rather than vice

Wanted: an arbitrator

VV difficult: and aropticator
by Geerge Brosso, director of the North East London Phytechnic, has social work trobubing course run of the Institution, putting in jeoporty the chares of the commutee of East London boroughs which maintain the golytechnic and complains of being ceught in a "trial of the orange the local without in the social set and the broy reaponsible for routing and the social set and the broy reaponsible for the social set and the broy reaponsible for the contract for one the broy reaponsible for the contract for one the broy reaponsible for the contract for one the broy reaponsible for the broy of the

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LETTERS TO THE EDITOR

Marxism in academe

Sir,—In your piece "Marxism in lib, overseas students, etc., etc.—are universities: the need for toler-mere secondary connuctinge from behind which the primary misettremarked that the Polytechnic of North London, "the Grunnvick of higher education", descrees less sympathy than the "unjustly matigned Open University". These currons phases attacks can be pressed forward. The ultra-Left's sincerity index is group to the grunnic state of the second sta

unjustly maligned " of the OU?

All that is of kille importance. What is of importance is the way a which you, and the contributors to the correspondence un " Marxist bias", have - whether deliherntely or through simple foolishness cannot tell—misaed the point.

I am surprised, for exomple, ot the plucidity with which you wrote "that such dissent is no longer always expressed in alsurace and palito terms within well known if unwritten rules of academic conduct, but sometimes of academic con-duct, but sometimes crudely and occasionally even violently, in wilful disregord of such rules raises the pressure still further" (or indics). How many years of crude and violent repetition of "dissent" are needed to convert sometimes and occasionally, in your eyes, into regularly and repetitelly? Or perhaus you expect us to pretend that those crudinies and violences

You also prote that "it is proh-ohly a mistako to place tou much emphasis on the Marxist character of coatemporary dissent. . . It would hnve happened without Marx." You can tell that to the Would have happened without Marx." You can tell that to the horse murines. We nere not the the that what characterizes the student is procisely its lack at index of the college to sugard in the bort dissent as if it were in the role termine of the college to sugard in the volut dissent as if it were in the role termine of the college to sugard in the volut dissent as if it were in the role termine of the college to sugard it is procisely its lack at index of the college to sugard it is procisely its lack at index of the college to sugard its is the role of the college tof the college to sugard its is the

The more than a second second

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These curious abservations 1 poss with anly two comments: first, why choose PNL? Why not LSE, Middlesex, Essex or NELP, for a Grouwick badge? Secondly, why It is characterized by a primary rational and analytic mental mode the is now several years since I drew ettention, by a TES review, to the Merrist bles of one of its courso text, and my criticisms were non so far as J know, rebutted. Mayle pour Paylavian reflexes need servic-

I am most grateful to the author I am most graterul to the annor-student of Lancaster for his admir-able formulation. I am in favour of it. I on against the other thing. An important element of the poli-tical wing of "the other thing" is precisely that ultrafie has Marxist) Infection of universities, Marxist) Infection of universities, culleges and schools of which we have been speaking. If you are willing to talerate that, you are contributing to compare that, you are contributing to one process and one only-the eventual cutting of your own threat. Yours faithfully, TERENCE MILLER,

Director, Polytechnic of North London.

Sir,—Io belahuming the Pulytechnic of North Londan as "The Grunwick of higher education", your article of August 19 fails to take seriously the perceptive comments you make elsewhere in the same article.

You suggest that the rudical Yon suggest that the rudical morement has two elements; direct action, and an underpinning in Marxist daught. It has been sag-gested (in o paper by Ernest Gell-ner; The Panther and the Dore) that what characterizes the student movement is precisely its tack of theory. Indeed one looks in vain at the Polytechalte of North Landon for an adequate philosophy of higher education from du radical the John to pressive extended and policity of the state o

Appointments at Cardiff

Sir,---I have usly just seen -leading article How not to reconcies (THES, August Br the penalticitate paragraph empiricite two "Reports priswhich should be ubserved in a lug academic appointant namely that "they should be pt licited as widely as possible et responsibility for making the Et chatter should be as widely and as possible ".

As secretary to the College for ril and to the two oppointing of mittees in question, i feel a me-sary to state that (as Mr Free revited in his report) the two p. revited in his report) the top of were advertised both in to columns and in those of The Una and that copies of the atom ments avere in accordance side college's normal practice same universities in the UK ad compared to the Australia copies were sent to the Assoint circulatinn.

The appointing committee in both instances larger thend 11 members in each case in of the unusual and interdista

nature of the appointment In view of these facts ant; cult to see how the two pix's enunciated by you were their violnted of Curdif". Yours faithfully,

deputy principal of Volvesige lege, Cardiff (THES, Augustic Verluel quibbling npart, he doesn

attempt to deny what is evided incontestable : namely the Point

Registrar,

L. A. MORITZ, Vice-Principal (Administration): University College, Cardiff. Sir,-It is hard to see what g

In all.

since otherwise it leads to no recog-alzed qualification. The remsining college-validated iploms are being squeezed hold by this lack of national reenguidant, and because studeots on them is net receive mandatory awards from their leas. their Leas.

It is thus virtually impassible to predict what courses will be run-ning, and where, two or three years bence. It may be argued that the planing problam this system creatus Invest for when there are used in this system croates when the service is any politents but "expression croates when the system croates is the problem is system croates when the system croates is the problem is system croates. The instance, on November 1.
 I're the system croates is the system croates in the system croates is the problem is system croates in the system croates is the problem is tot, as you suggest, can be unded of the distributions of higher education institutions of higher education institutions is intolerant by the coust is intolerant by the coust of the system coust of the distribution of the time the open university from the open university from the the concelled bottes. A transformer coule could be the open university from the transform could be the the open university from the transform one university. A general will general the coust is intolerate the incolerable (for contemporary Cultural Studies over the Cauch is still to be approved by distributes areas, end. the special is studied the the open university from the order of new courses the special is the open university from the transform one university. A general will area the special is studied or two salaries, while the options of head of the could drow two salaries, while the problems is notered or the transform one university for the problem is is antional of the could drow two salaries, while the problem is a stational to the they affect or the sector is constant and dissent the the atom is the real and one atom is the problem is a stational well as the meaning.
 The the could be a station of the they affect in the could drow two salaries, while and the sector is the could be the they affect or the sector is former. The meaning for disease area is the transform or the problem is the sector brokes or the could area th <text><text><text><text><text><text>

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and the set of the second s This is the last of six articles in which I have, over several months, single to examine aspects of the development of post-school admea-tion in Britain—the control and families of the add colleges of edu-cated, the financing of the univer-ties, the shift front a "youth" to a "recurrent" pattern of educato a "recurrent" pattern of educato a "recurrent" pattern of educa-tion, and the role and capabilities. of the Repartment of Education and Science. In this article I avant to concentrate upon the planning of higher education specifically, hun must of vecessity allude to themes Exercised provinsity.

disrussed previously. "Higher education" is not a ferm used in the basic law of eiluterm used in the paste law of edu-cation. Once it was, but with a meaning quite different from that which we now attribute to it— namely, post-elementary education, subsuning the bulk of what we now out sendary education. It is there subsuning the bills of what we only call secondary education. It is, how-ever, used to refer to all courses with a terminal standard higher that GCE A level, thus including higher technician work, the DipHE, teachers' certificato courses, several college diplomas, and somu not-experieocs courses, os well as post-graduate study.

Courses of higher education are thus offered not only by conven-tional universities, the Open Uni-versity, nelytechnics and colleges of education, but by s while range of ather colleges—over 460 institutions to all

This points to one rensoo why plauning its development is o niffi-cult task for Government. There is no single overall system of con-trol for all of these justitutions. The universities are louded through the Universities are louded through the Universities are round a trading in the University Grams Committee and each is autonomous, or self-goveru-ing. A complex, but negative, sys-tem of course control is operated in advanced further educotion, through the Realesch Advisory, Councily the Regloosl Advisory Councils the Regional Advisory Counters (RACs) and HM Inspectorote (on behalf of the Secretary of State). The planoing problems implicit in this complex structure of finaning and course approval are com-pounded by the system of course validation. Chartered institutions validate their own courses. But in

Where do they go from here? In the last of six articles on the current state of highereducation, Gerry Fowler, MP, summarizes the case for more effective planning



Looking before leaping is only safe way forward

validation. Chartered institutions validate their own courses. But, in the public sector the approval of a university, or Council for Notimul clans' Education Council, or of s Joint National Council, or of s son before a cnutse can run, ince otherwise it leads to no recog-nized qualification.

The only clear exceptions to this The only clear exceptions to this last statement have, of course, beco-in meilleal education and teacher training. (In some other vacational areas, professional institutions have sought in limit the provision of places in accordance with their own estimates of unapower used, for e example, for mehltects.)

In the late 1950s attempts were nulc to restrict the growth of medical schools. By the middle of the following decade it was urgued that there must be considerable expansion to provide o supply of doctors adequate to a rising popu-lotion. Before that expansion is bolic consolete some new argue that

because of an apparent faltering In the downword trend of birlis In 1972, and partly because the lower wustage rate among existing teochers in recent years could not be foreseen.

A lete start to the pruoing A lete start to the pruoing process, plus restroints on public expenditure, have led to teacher unemployment. At lenst, however, the lust target figuro for teacher education pinces in 1981 will still a peruit further improvement of pupil steucher ratios in the 1980s if illetha its not vise, and lecause innumy are in diversified institutions, any future expansion. If births do any future expansion, if births do rise, cnn he accountished more cosily than whee monotechnic colleges formed the bulk of the training system.

Another change in teocher odu Another change in teocher odu-cation should unke the planning of higher education nualbers some-what easier. The Secretary of Stote has now nanounced that the last intuke to certificate courses will be in 1979 or 1980; thereafter inteod-ing teachers will take degree courses with the standard two A-level entry requirement.

particular subjects, it still would not fullow that the total number of places matched totol qualified demand. There can always be on excess of qualified demand over education derelopment. This is the more serious to that the British system of higher educa-tion provision is based overtly on the Robbins principle that places shull be provided far those qualified far and seeking them. There is tin

An assumption that the new high level of faces will deter some overscas students who weuld otherwise huve done so from secking ploces in higher education, togother with some home suulents not entitled to mandatory awards, underlies the latest reduced projection of places

latest reduced projection of places required in 1981. The continuing full in the number of those begin-uing tencher education courses with less thou two A lovels has olso con-tributed in the regular downward tevision of the projection. It is difficult to put on exoct weight on each farter, hecause the bensive account of its projections since Plunning Paper No 1, in 1970. Thus marked the high point of the "1981 series" af projections (if so I may call it), which had begun with the Robbins report. At that time the ivcrease occh yeac' in quolified demaud had been so much in excass of the Robbins figures that the thee

shouse is at its men deletable when the total is broken down between discubility. Fur science and employ certing of particular heavy capital revestment new be required. Elecarghout the late 1964's and cody 1970s Government cought the encourage retruitment to their disciplines by the provision of addi-tational places. In 1968, the Doct tixed for the following galageer nious the holotte of science and continue time to be a science and cogneering to atts and social science places in the universities at 55:45.

Not enough students came for-ward to fill all the science and engineering glaces in higher educa-tion, and eren when places were filled there were often not ecough "good" students to permit students selection. This had two effects,

fi was one factor forming thu new polytechnics to expand in arts/social science areas, (This was not necessarily a contradiction of their purpose, since they were to be "applied" in orientation, not purely scientific.) And even in the had first choice of conditates, plans hod to be revised, so that by the end of 1972 the new target for

the end of 1972 the new target for science:nrta places is 53:47. Predicinbly, though late in the day, there was an outery about un-filled science places, led by the Prime Minister. Yet no Govern-ment can effectively pursue poli-cies which are not obviously com-pathle, namely the abservance of the "Robbins principle" and the predetermination of how mony students shall take courses in par-ticular disciplines, unless action is simultaneously token the influence both the rewards which graduetes in those disciplines subsequently receive, and the school curriculum. It may be doubted if even the

It may be doubted if even the £500 which employers can now pay 10 students without any deduction from their grants (in addition m the standard £185 "disregord") will have much effect by itself. The use which industry makes of engineering graduates heir suggest engineering graduates, heir overage salurics and careet prospects, will be more significant. This is conbe more significant. This is con-sidered yet again in the recent Department of Industry document Industry, Education and Manoge-ment; it has been discussed for over a decade, but little lies happened. It is notorious that in the schools

choices between subjects, which are effectively career choices, are

common regulations msking it coster for many to take "ecadeonic" and "proctical" courses simul-taneously. But that soems as far

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A power within a world of power

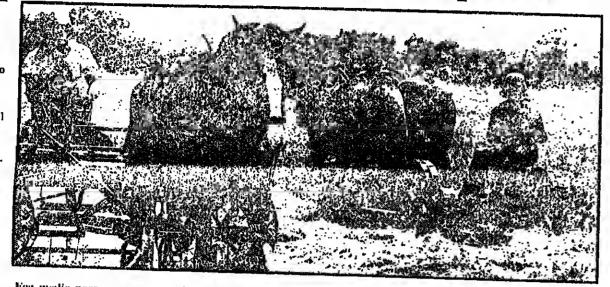
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Gurevilch and Janct Woullncott Arnold, £9.95 and £3.50 ISBN 0 7131 S939 1 or 5940 5

Until quite recently research on Until quite recently research on noss communication was dominated by the question "Who says what, to whom and with what effocts?". Scentlagly comprehensive, the opprooch octually defined the pro-ecss of moss commulcation in o quite narrow, superficial and "hypodermic" manner. Research conducted in those terms was, how-ever, cunolatively disappointing:



Chronicle

In sum, in this type i shydn: Chronicle and Works, mays communication is veloce 111, Haydn hr England han the ownership of the (1791-1795) is shared, disputed or thanes & Hudson, £28.00 however, the cultural as 198N 0 500 01164 8

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300/3 Harmonic change

Music in Transition: A Study of Tranal Expansion and Atomality 1900-1920 by Jim Samsme Dent, £7.50 Dent, \$2,50 Den hy Jim Sanishe Dent, £7.50 ISBN 0 460 04245 9

Samson's study for any firm pointers Solution's study for any firm pointers to the contemporary terrain. Per-haps, in the long run, it is not music io transition which bothers the expletit, but a change in the pattern of total analysis that monality has forced into heing. Certainly the explanation for a continuing estrongement of vital present-day music from its expositors is likely music from its expositors is likely to bo found, if anywhere, in the experts' refusal to consider such

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Listeners

Music-Society-Education by Christopher Small John Chiler, £6,95 ISBN 0714535303

signed on next year's recruits, but this neighty world comes Mr Small's book, questioning the basic assump-tions for all this activity.

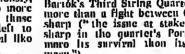
to be found, if anywhere, in the experts' retoxal in consider such important contextaal matters as the influences of exotic scales and modes (as collated by Helmholtz and his translator Ehlis), or composers' quasi-scientific attraction to speech influences, and their increasing sensitivity to effects of fluthre on percaption of pitch relationships— nil of which begon in the latter half of the nineteenth centary. But if Samson's thesis thes not go far enough, its chronolagical sequel ond componion valume by Arnold WhittaH, intended to cover tha period from 1920 to the present,

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In Roger Nichols's Intest look on a French composer, Ravel proves himself to be an ideal subject for the cogene format of the Muster Musicians series. No sense of a quart in a plut pot here, for the anthor is able to present a austeal hingraphy which, in far fewer words than any of the other English books (mostly transletions) available, gives a clearly focused end therough picture of this elusive personality, as well as a useful analysis of his mosical style.









Bille of Pollers: symbolic illumination, in The Bibliothème Nationale, Parls, From The Humbred Years War by Alan Lloyd, published by Hart Dovis, MacGibbon et £5.95.

Prehistoric past Irclaud in Prehistory by Micheel Herity end Gourge Bogan Routledge & Kegan Poul, 18,95 ISBN 0 7100 8413 7

Hillforts : Later Prehistoric Earthworks in Britain und Irelaud edited by D. W. Harding Academic Press, £24,00 ISBN 0 12 324750 0

Actuation of Press, £24.00 It is over a quartor of u century since Dr Joseph Raftery, the pre-sent director of the National Museum of Ireland, published his Prekistoric Ircland: no general sur-vay of prehistoric Irelant has appeared shuce 1951, and this pre-sent volume, Ireland in Prekistory, Is welcome if only for its exlatence. Ireland, north and sonth, is well supplied with prehistoric orchaeo-nearcr the continent, or on the comtioont, are eager to know all we can in modorn terms about how distant outposts of the European world, like ultima Thule, Orkney or Shetland, fered in post-glacial ond pre-Roman times. Did it creatc, as did Malte, and southern Brittany. It was en excollent itee to being we can in modorn terms about how distant outposts of the European world, like ultima Thule, Orkney or Shetland, fered in post-glacial ond pre-Roman times. Did it create, as did Malte, and southern Brittany, and tha reel ultima Thule of the Northern Scottish Isles, en Indivi-duel and important semi-civilize-tion? The enswer is yes: New Grange and Irish gold provide an immediate and exciting answer. Perhaps the Initial disappoint

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and greatness of Egypt ont mesopotamia and Greoce; why does this book not tell us of the brilliance of early Iralaud? This is probably because tha authors see the prebistoric reford of freland in terms of material artifacts and the techoological picture of the pest which was taught to thom. Both are lecturers in the tepartmont of fieltwork, research and teaching. I book: the euthors heve dono woll but thay could have done much better. Whet they heva givon us is a dull but vrell-documented account of whet is known about prehistoric freland. Chapters one to four, dealing with the Stone Age and tho collective tombo, ore by Herity (us

alsa chapter 11 entitled " Retrospeci⁹1. The remaining chupters, dealing with the Irish past from Beakers to the Iron Age, are by Engun.

The most unsatisfactory part of the book is its treatment of radiu-carbou dates—fundamental for any modorn study of the preditory of any country. Only about haif-a-dozen dates are mentioned: they are not given laboratory numbers

of them.

ond pre-Roman times. Dld it creatc, as did Malte, and southern Brittany, and tha real ultima Thule nf the Northern Scottish Isles, en Indivi-diell and important semi-civilize-diel and written about them in tha lest 40 ycers. They are all hare: Christopher Hawkes, doyen of hillfort archachlogists now that Sir Mortimer Whealer is deed, reassesses the St Colharinc's Hill, Winrhester report of 1930. Gcraiti Duming looks bock ot the 1931-34 excarations at Salmonsburr, but the eachiest monutinents of prehlotorie architectura in tho work at Blewburtoo Hill, Berkshire, and greatness of Egypt onti-mad greatness of Egypt onti-the book not, each why does

Age and tho y Herity (us Glyn Daniel

Ethereal philosophy

BOOKS

The Orighns of Evil in Hindn Mytho by Wendy Duniger O'Finherty University of California Press, £11.25 ISBN 0 520 03163 G

This is the fascination of Hinduism "This is the fascination of Hinduism —all the possible solutions are there", affirms Ir O'Flaherty at the cud of her search through a juagle of myths for answers to the problem of eril. But some solutions seem herer to appear in India, well, hardly ever, since the myths are in-minerable and nobody knows them all.

The Devil of Manichean an The Deril of Manichean and Judeo-Christian mythology is "sel-dom invoked", because Indian demons were unbiwlent or even virtuons. The single, transcendent God of Jult Is for from the deities who pop in and out of boman life. And the ricorinus-suffering solution of Isaich and the New Testaneou And the ricorinus-suffering solution of isaiah and the New Testinment has little parallel, for when Dr O'Flinherty interprets the famons llynin of Purusha, the cosnic being (Rig Peda 10, 90), as "an act of erne and literal self-sucrifice on the part of the primeval creator", the text itself says that "the gods per-formed the sucrifice with Purushin as an allation", dividing him into creatures and classes of men. As In her previous books [17]

As in her previous books itr O'Flaherty ranges through Indian As in her previous books fir i O'Faherty ranges through Indian mynihology with case and charm, of abandoning her earlier "modified f structuration technique" because the problem of evil has many irre-ducible facers. Indians have been called "strangely silent" about the mystery of eril, because attention i was fixed on philosophy whereas mythology has more spontaneous and varied attitudes to theodicy. Sul-theodicy is not confined to Semitic munchelsm, but "it is the touch-stom of all religions" for headly is from past actions, logically complete hue emitionally unsain-fying. Often regarded as dominant, "rito myths of Karma were widely refected in India" and even in Hubilitism (conducty and progers contradict is cold logic. The Sanskyt word page is trans-

contradict its cold logic. The Sanskeit word papa is trans-lated as "cvll", though without the distinction of moral from natural evit found in restern theol-ogy, and this libering was helped by "the bolion tendency" to con-shier sin as a mistake due to ignor-ance rather than a flawed character. With such othercal philosophy and myths of divino ancies, there is a grout difference from Judeo-Chris-tian morality, and Dr O'Floherty emplosizes it in two ways. Eoch chapter is headed with e verso from the Bible, whother es comperison or contract is uncer-

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Seen from the sierra

Peru: n Culturul Illstory by Henry P. Dobyns and Paul L. Doughts Oxford University Press, £7.75 und £3.75 ISHN 0 19 502098 8 nnd 19501199 X

The earlier rolumes in this series of Latin American histories have orrited their outstanding reputa-tion as short but skilful interpreta-tions of a particular country's poli-tical, social oud ccountile develop-

thulike carlier authors in the thilike earlier authors in the series Professors Dobyns and Daughty are not historians. Joth gamed their reputations as anthro-palogists cancerned with the well-known Cornell/Vicos project in the Pernyian Audes. Their background provides them not only with a dis-tinctive disciplinary approach. In contrast to earlier historians of Pern, who wrote almost cutirely contrast to enrifer historians of Pern, who wrote almost cutirely from a Linn viewpoint, they have and continuing importance of the Indian traditions of the sizera. Their emphasis, early in the bank, on the heteringenous ecology and popula-tion of the sizera raises hopes of a fresh interpretation of Peru's his-tory. tory,

The complexity of the subject and strict limitations on spare disappoint this hope. While emphasizing the rontinuing influence of the pre-ponmest civilizations of Pern, the anth-ors rarely explain how this differenors rarely explain how this differen-tiates the Peruvian experience from other areas of Spanish America. Problems at present important to colonial historians receive little m-tention. Tobyns and Daughty note, for example, that Peru's independ-ence movement was belated, conser-vative, and equipocal, but do not link this with the white stitle's fears of the Indian majority. The legents of four Peruvian saints and the orig-ity of religious cults receive more attention than the church's role as a landowner and banker. The rise

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Mexican synthesis

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The 'science' of the future?

ing and well worth studying on their own. But the tore and contributions seem to be set by jamsch's grandiose verbidogy and negosificently high-sounding con-certs which, when one comes to try-to understand their real signifi-cance cloud into semi-mystical obscuranticisms that could mean almost maything. As well as having to grapple with a bast of newly coined indi-ridual works, the datiful reader will have to try to assimilate the significance of concepts such as "symbiotic pluralism", "quasi-continuous dynamic balance", "synace as plenum,", "super-consciaus learning", omong mony others, finally calationing in the key to everything: "Self-realization through self-transcend.

in the patterns of the dynamic synthiotic pluralism, "quasi-continuous dynamic balance", "quasi-continuous dynamic balance", "super-conscious learning", omong mony l others, finally colationting in the key to everything: "Self-realization through self-transcend-a ence" which is never clearly f defined. Indeed, according to l'an his article entitled "Openness a self-transcendence", it can only s really be understood through self-transcendence. Perhaps it would the vrong to try to define it because " "if insight does not come hy itself, quoting Jung, page 241).
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Stop the world

The Human Quality hy Amelio Peccei Pergamon, £6.50 mmd £3.25 ISBN 0-08 021480-0 and 021479-7

This is the story of a deeply concerned nerson, angry at injustice, appalled by violence and waste, helieving in human ubility to shape the destiny of the world and imparient at the slowness of political processes. Peccei describes the evolution of his thought and the projects he has initiated for studying "the world problematique". Ostensibly about the need for change in the quality of people, actually it is about the author; iquiring, erulite, romantic, persuasive-and supremely obstinate.

He depicts a future murid community, governed by intelligent, concerned, rational people-the new

Clandians, Charlemague, or at any other time were cruly more in con-trol of their lives than those of today, although the negative effect of united approach and a second second of intertual economic power on the ability of United Nations and other agencies to allegiate the lot of the punrest is rightly diagnosed. Although expressing belief in the

ability of people to respond to changes in their combinions and to thange in the need for a fundamental thange in the need for a fundamental thange in the conomic and other institutions of society, he disubses in very few words the fact of un-equal tyealth and the likelihood that redistribution would be resisted and fails to mention exploitation of one economic class by another in my CONCENT.

In the end the cavalier treatment of the problem of ovnership and the fullare to grapple with the political actions necessary to achieve this participatory and responsible society is frustrating. Many have dreamt fine dreams, few Many have dreamt fine dreams, few have tried to map a path to ochieve them. The Association for the Development of Latin America, the International Institute for Amplical Systems Analysis, the Chib of Rome and the Six Missions for Mau-kind ere all very well, but they do not provide a wsy forward. The Club of Rome and its reports have contributed to the explosion of the myth of growth as a solution th cconomic problems, and it is true that numerous, otherwise conflicting protest groups, have heralded them as becaeons, but is not Peccei really saying "ston the world, I want to saying "ston the world, I want to take over "? This is not good enough, even if the world he wants is a good worlt.

Pauline Marstrand

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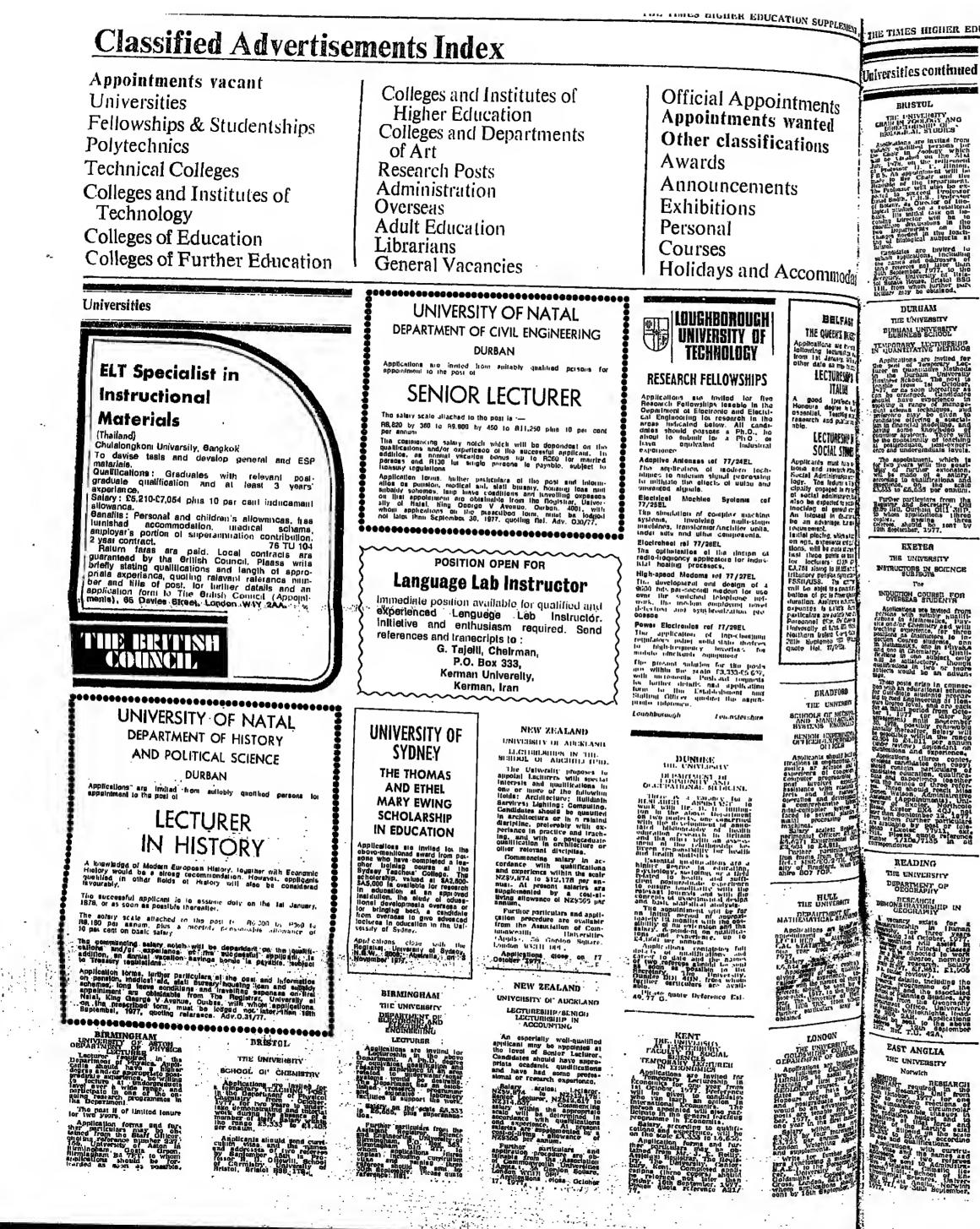
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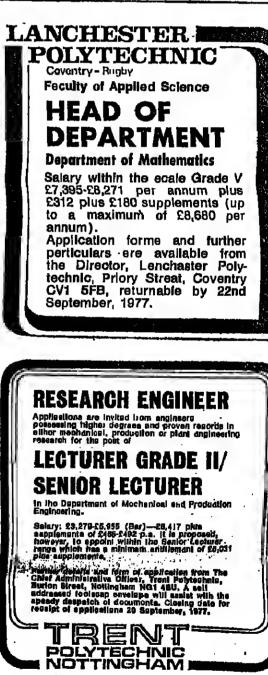
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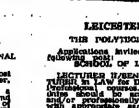
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